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No. 97-147

In the
Supreme Court of the United States
October Term, 1997

ATLANTIC MUTUAL INSURANCE CO. AND INCLUDIBLE SUBSIDIARIES,
Petitioner,
v.
COMMISSIONER OF INTERNAL REVENUE,
Respondent.

On Writ of Certiorari
To The United States Court of Appeals
For The Third Circuit

# JOINT APPENDIX

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Petition for Certiorari Filed July 22, 1997
Certiorari Granted October 20, 1997

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UNITED STATES TAX COURT
DOCKET ENTRIES

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| 0002 | 12/06/93 | DESIGNATION of Trial at New York, NY |
| 0003 | 01/31/94 | DESIGNATION of Trial at New York, NY (Newark) |
| 0004 | 01/31/94 | ANSWER |
| 0005 | 05/23/94 | JT. MOTION for assignment of case. |
| 0006 | 06/06/94 | ORDER that case is assigned to Judge Chiechi. Mot to assign case is gr. |
| 0007 | 06/14/94 | ORDER by 6/27/94 a joint proposed trial preparation schedule be filed. |
| 0008 | 06/28/94 | PROPOSED PRE-TRIAL SCHEDULING ORDER by Resp. (per Judge) |
| 0009 | 07/07/94 | ORDER set 3/13/95 New York, NY (Spec) for trial. All discovery to be completed by 12/1/94. All mots to compel discovery & mots with respect to pleadings shall be served & filed by 12/8/94. All mots to compel |

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| | | stips. are to be served & filed by 12/28/94. Stip. of Facts due 1/9/95. All mots to compel stip. of facts be served & filed by 12/28/94. Mots with respect to conduct of trial be served & filed by 1/20/95. Suppl. Stip. of Facts & Dispositive mots due by 2/10/95. Jt. status reports due 10/24/94, 12/1/94, 1/16/95 & 2/15/95. |
| 0010 | 10/17/94 | MOTION by Peter K. Lathrop to withdraw. (N.Obj.) |
| 0011 | 10/28/94 | REPORT (JOINT). (p.m.t.) |
| 0012 | 11/08/94 | ENTRY OF APPEARANCE by James H. Kenworthy. |
| 0013 | 11/18/94 | REPORT by Petr. |
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| 0015 | 12/05/94 | REPORT by the Parties (Per Judge) |
| 0016 | 12/09/94 | ORDER time for submitting expert witness reports is ext. to 12/16/95. Time for submitting rebuttal expert witness reports is ext. to 1/17/95. |
| 0017 | 01/09/95 | STIPULATION OF FACTS w/Exs. Lodged. |
| 0018 | 01/18/95 | REPORT (JOINT) (p.m.t.) |



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| 0019 | 01/25/95 | MOTION by resp. in limine. (p.m.t.) |
| 0020 | 01/26/95 | ORDER Petrs. file to be received by 2/13/95 a response to Resp's mot. in limine. |
| 0021 | 02/06/95 | RESPONSE IN OPPOSITION by Petr. to Resp. mot. in limine. |
| 0022 | 02/13/95 | SUPPLEMENTAL STIPULATION OF FACTS w/Ex. (p.m.t.) LODGED (Per Judge) |
| 0023 | 02/14/95 | REPORT (JOINT) filed. |
| 0024 | 02/27/95 | MOTION by resp. to withdraw mot in limine. (N.Obj.) |
| 0025 | 02/27/95 | JT. MOTION to file Stip. of Facts. (2nd Suppl. Stip. of Facts Ld) |
| 0026 | 02/27/95 | ORDER trial is continued. |
| 0027 | 02/28/95 | STIPULATION OF FACTS filed. |
| 0028 | 02/28/95 | SUPPLEMENTAL STIPULATION OF FACTS |
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| 0030 | 03/03/95 | JT. MOTION to submit case under Rule 122. |

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| 0031 | 03/03/95 | JT. MOTION to designate 4-24-95 for Original Briefs & 5-26-95 for Reply Briefs. |
| 0032 | 03/03/95 | ORDER that case is submitted to Judge Chiechi. Jt. mots. to submit under Rule 122 & designate Briefing schedule are Granted. Briefs Due 5-17-95 & Answering Brfs. Due 7-3-95. |
| 0033 | 05/11/95 | ORDER that case is submitted to Judge Foley. No longer submitted to Judge Chiechi. |
| 0034 | 05/16/95 | MOTION by resp. to ext. time to 5/19/95 & 7/5/95 for briefs. (N. Obj.) |
| 0035 | 05/19/95 | BRIEF for petr. |
| 0036 | 05/22/95 | BRIEF for resp. (Leave Gr.) |
| 0037 | 07/05/95 | REPLY BRIEF for resp. |
| 0038 | 07/06/95 | REPLY BRIEF for petr. (p.m.t.) |
| 0039 | 10/26/95 | MOTION by resp. to file supplemental brief (Suppl. Brf. Ld.). |
| 0040 | 11/01/95 | ORDER mot. to file suppl. brf. is Cr. Petr. by 11/24/95 file reply to suppl. brf. |
| 0041 | 11/01/95 | SUPPLEMENTAL BRIEF by resp. |



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| 0042 | 11/09/95 | MOTION by petr. to ext. time to 12/1/95 to file Reply to Supplemental Brief. (N.Obj.) |
| 0043 | 12/01/95 | REPLY by petr. to supplemental brief. |
| 0044 | 02/22/96 | MEMORANDUM OPINION, Judge Foley T.C. Memo. 1996-75 (Decision will be entered for Petr.) |
| 0045 | 03/11/96 | NOTICE of Change of Address for atty. John S. Breckinridge, Jr. |
| 0046 | 03/11/96 | NOTICE of Change of Address for atty. James H. Kenworthy. |
| 0047 | 04/01/96 | STIPULATION for entry of decision. (File Per Judge) |
| 0048 | 04/23/96 | DECISION ENTERED, Judge Foley |

APPELLATE PROCEEDINGS

| | | |
|---|---|---|
| 0049 | 06/26/96 | NOTICE OF APPEAL by resp. to U.S.C.A., 3rd Cir. |
| 0050 | 06/27/96 | NOTICE of Filing with copy of notice of appeal mailed to John S. Breckinridge, Jr. |
| 0051 | 06/27/96 | NOTICE Regarding Record. |

GENERAL DOCKET FOR
Third Circuit Court of Appeals

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| 7/10/96 | Tax Court Case Docketed. Notice filed by Commissioner IRS. (pat) |
| 7/22/96 | APPEARANCE from Attorneys John S. Breckinridge, Frederick B. Lacey & James H. Kenworthy on behalf of Appellee Atl Mutl Ins Co, filed. (mmb) |
| 7/22/96 | DISCLOSURE STATEMENT on behalf of Appellee Atl Mutl Ins Co, filed. (mmb) |
| 7/22/96 | APPEARANCE from Attorneys Gary R. Allen, Edward T. Perelmuter & David I. Pincus on behalf of Appellant Commissioner IRS, filed. (mmb) |
| 7/22/96 | INFORMATION STATEMENT on behalf of Appellant Commissioner IRS, RECEIVED. (mmb) |
| 7/22/96 | STATEMENT OF FACTS AND ISSUES on behalf of Appellant Commissioner IRS, received. (mmb) |
| 8/2/96 | BRIEFING NOTICE ISSUED. Petitioner brief and appendix due 9/11/96, filed. (pat) |



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| 9/11/96 | APPENDIX on behalf of Appellant Commissioner IRS Copies: 4 Volumes: 1, Delivered by mail, filed. Certificate of service date 9/11/96. (par) |
| 9/16/96 | MOTION filed by Appellant, Commissioner IRS, to file corrected brief. Answer due 9/23/96. Certificate of Service dated 9/12/96. (cpm) |
| 10/9/96 | ORDER (Clerk) granting motion by appellant, Commissioner IRS to file corrected brief. The brief is filed as of the date of this order. The Brief previously filed on September 11, 1996 is stricken. Counsel is directed to retrieve the previously filed brief within 10 days from the date of this order or such shall be destroyed, filed. (cpm) |
| 10/9/96 | CORRECTED APET BRIEF on behalf of Commissioner of Internal Revenue, Pages: 50, Copies: 10, Delivery by mail, filed. (bmh) |
| 10/11/96 | BRIEF on behalf of Appellee Atl Mutl Ins Co, Pages: 50, Copies: 10, Delivered by mail, filed. Certificate of Service date 10/11/96. (bmh) |

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| 10/28/96 | REPLY BRIEF on behalf of Appellant Commissioner IRS, Copies: 9, Delivered by mail, filed. Certificate of service date 10/28/96. (bmh) |
| 12/18/96 | CALENDARED for Thursday, March 13, 1997. (wab) |
| 3/13/97 | ARGUED 3/13/97 Panel: Mansmann, Lewis and Michel, Circuit Judges. (agb) |
| 4/24/97 | PUBLISHED OPINION (Mansmann, Authoring Judge, Lewis, Michel*, Circuit Judges), filed. *Honorable Paul R. Michel of the US Court of Appeals for the Federal Circuit, sitting by designation. (awi) |
| 4/24/97 | JUDGMENT, Reversed. Costs taxed against Appellee, filed. (awi) |
| 5/7/97 | BILL OF COSTS filed by Appellant Commissioner IRS. Certificate of service dated 5/5/97 (awi) |
| 6/16/97 | MANDATE ISSUED, filed. (awi) |
| 7/10/97 | REPORTER at 111 F.3d: 1056 (rmg) |
| 7/28/97 | Supreme Court of U.S. notice filed advising petition for writ of certiorari filed in the Supreme Court on 7/22/97 |



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| | at Supreme Ct. case number: 97-147. (ctc) |
| 10/22/97 | U.S. Supreme Court order dated 10/20/97 at S.C. number: 97-147, granting petition for writ of certiorari. filed. (ctc) |

UNITED STATES TAX COURT

| | | |
|---|---|---|
| ATLANTIC MUTUAL INSURANCE COMPANY and Includible Subsidiaries, | ) | |
| Petitioner, | ) | Docket No. |
| v. | ) | |
| COMMISSIONER OF INTERNAL REVENUE, | ) | |
| Respondent. | ) | |

*PETITION*

The Petitioner hereby petitions for a redetermination of the deficiency set forth by the Commissioner of Internal Revenue (the "Commissioner") in her statutory notice of deficiency dated September 23, 1993 (Symbols A:NWK:JTI:GT:90D), and as the basis for its case alleges as follows:

1. Atlantic Mutual Insurance Company ("Petitioner") is a corporation with its mailing address and principal office located at Three Giralda Farms, Madison, New Jersey 07940. Petitioner's employer identification number is 13-4934590. Petitioner is, and at all times relevant to this Petition was, the common parent of an



affiliated group of corporations which filed consolidated federal income tax returns pursuant to sections 1501 through 1504 of the Internal Revenue Code of 1986, as amended (the "Code"),* for the taxable year ending December 31, 1987 (the "taxable year 1987") and for the taxable year ending December 31, 1988 (the "taxable year 1988"). During those years the affiliated group consisted of Petitioner and eight includible corporations. A list of the includible corporations is included in the Appendix to this Petition (the "Appendix") and is marked Exhibit A. On or about August 10, 1993 Petitioner filed an amended return (Form 1120X) for the taxable year 1988 in which it claimed a refund of $122,781. The consolidated returns for the taxable years 1987 and 1988 and the Form 1120X for the taxable year 1988 were timely filed with the Internal Revenue Service Center in Holtsville, New York.

2. The statutory notice of deficiency is dated September 23, 1993 and was issued by the office of the Internal Revenue Service in Newark, New Jersey. A copy of the statutory notice of deficiency, including all accompanying statements and schedules, is included in the Appendix and is marked as Exhibit B.

3. The deficiency determined by the Commissioner is in income tax for the taxable years 1987 and 1988, in the amounts of $519,837 and $610, respectively. All of the deficiency of $519,837 for the taxable year 1987 is in controversy.

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* All section references, unless otherwise indicated, to the Code.

4. The determination of tax set forth in the notice of deficiency is based upon the following errors:

a. The Commissioner erred in determining that Petitioner's consolidated taxable income for 1987 should be increased by $1,339,039 to reflect her determination that the unpaid losses and unpaid loss adjustment expenses at December 31, 1986 reported by Petitioner and Centennial Insurance Company ("Centennial") included amounts constituting "reserve strengthening" within the meaning of section 1023(e)(3)(B) of the Tax Reform Act of 1986, Public Law 99-514.

b. The Commissioner erred in determining that Petitioner's consolidated income tax liability for the taxable year 1987 should be increased by $1,607, the amount of environmental tax under section 59A attributable to the net "reserve strengthening" adjustment of $1,339,039.

5. The facts upon which the Petitioner relies, as the basis for its case, are as follows:

a. Petitioner and Centennial (collectively, the "Companies") are property and casualty insurance companies subject to tax under section 831.



b. Pursuant to the transitional rule in section 1023(e)(2) of the Tax Reform Act of 1986, the Companies computed their deductions for losses incurred for the taxable year 1987 by adding the amount of net losses paid during the year to the discounted amount of unpaid losses and unpaid loss adjustment expenses at December 31, 1987 and by subtracting from the resulting sum the discounted amount of unpaid losses and unpaid loss adjustment expenses at December 31, 1986.

c. Pursuant to the fresh start rule described in section 1023(e)(3)(A) of the Tax Reform Act of 1986, the Companies were not required to take into account for purposes of the Code the difference between the undiscounted and discounted amounts of unpaid losses and unpaid loss adjustment expenses at December 31, 1986.

d. Respondent determined that a portion of the Companies' unpaid losses and unpaid loss adjustment expenses at December 31, 1986 represented "reserve strengthening" and computed a decrease in the Companies' deductions for losses incurred for the taxable year 1987 in the aggregate amount of $1,339,039.

e. The Companies' unpaid losses and unpaid loss adjustment expenses at December

31, 1986 represented fair and reasonable estimates, based upon the facts in each case and the Companies' experience with similar cases.

f. The Companies' estimates of unpaid losses and unpaid loss adjustment expenses at December 31, 1986 were prepared by use of the same assumptions and methods that the Companies used to estimate unpaid losses and unpaid loss adjustment expenses in the years preceding 1986.

g. The Companies' estimates of unpaid losses and unpaid loss adjustment expenses at December 31, 1986 were not increased artificially, for tax purposes or otherwise.

h. The Companies' estimates of unpaid losses and unpaid loss adjustment expenses at December 31, 1986 did not include any amounts of "reserve strengthening" within the meaning of section 1023(e)(3)(B) of the Tax Reform Act of 1986.

Wherefore, Petitioner prays that this Court hear this proceeding and determine that there is no deficiency in Petitioner's income tax for the taxable year 1987 and that



Petitioner is entitled to a refund of tax in an amount not less than $16,084 for the taxable year 1987 (plus interest thereon as provided by law), and that this Court grant such other further relief to Petitioner as this Court may deem proper.

Respectfully submitted,

/s/ Peter K. Lathrop
Peter K. Lathrop
T.C. No. LP0024

/s/ John S. Breckinridge, Jr.
John S. Breckinridge, Jr.
T.C. No. BJ0916

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(212) 269-0015

Attorneys for Petitioner
Atlantic Mutual Insurance Company

Dated: December 3, 1993

ATLANTIC MUTUAL INSURANCE COMPANY
V.
COMMISSIONER

EXHIBIT A



ATLANTIC MUTUAL INSURANCE COMPANY

**List of includible corporations for the taxable years ended December 31, 1987 and December 31, 1988**

| *Corporation* | *EIN* |
|---|---|
| **Atlantic Mutual Insurance Company (common parent corporation)** | **13-4934590** |
| **Centennial Insurance Company*** | **13-6104845** |
| **Atlantic Lloyds Insurance Company of Texas** | **74-2197692** |
| **Atlantic 45 Wall Street, Inc.** | **13-3381123** |
| **Atlantic Holding Corporation** | **13-3332001** |
| **Atlantic Management Services, Inc.** | **13-3331999** |
| **Atlantic Reinsurance Company** | **13-3362309** |
| **Atlantic Specialty Lines Insurance Company** | **86-0592933** |
| **Centennial Holding Corporation** | **22-2848453** |

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*** Centennial Insurance Company is incorrectly identified on page 2 of the notice of deficiency as Continental Insurance Co.**

ATLANTIC MUTUAL INSURANCE COMPANY
V.
COMMISSIONER

EXHIBIT B

The Notice of Deficiency was intentionally omitted. It is reproduced in its entirety in the parties' Joint Appendix in the Court of Appeals for the Third Circuit at page 10.



UNITED STATES TAX COURT

| | | |
|---|---|---|
| ATLANTIC MUTUAL INSURANCE COMPANY and INCLUDIBLE SUBSIDIARIES, | ) | |
| Petitioner, | ) | |
| v. | ) | Docket No. 25767-93 |
| COMMISSIONER OF INTERNAL REVENUE, | ) | |
| Respondent. | ) | |

*ANSWER*

THE RESPONDENT, in answer to the petition filed in the above-entitled case, admits and denies as follows:

1. through 3. Admits.

4. Denies.

5. (a) Admits.

(b) Admits, except denies that petitioner's actions were pursuant to the transitional rule of Tax Reform Act of 1986 section 1023.

(c) Denies.

(d) Admits.

(e) Denies.

(f) Admits.

(g) and (h) Denies.

6. Denies generally each and every allegation of the petition not hereinbefore specifically admitted, qualified or denied.



WHEREFORE, it is prayed that respondent's determination, as set forth in the notice of deficiency, be in all respects approved.

DAVID L. JORDAN
Acting Chief Counsel
Internal Revenue Service

OF COUNSEL:
DAVID E. GASTON
Regional Counsel
MATTHEW MAGNONE
District Counsel

By: /s/ William S. Garofalo
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By: /s/ Patrick E. Whelan
PATRICK E. WHELAN
Assistant District Counsel
Tax Court No. WP0082

DATED: JAN. 27, 1994

UNITED STATES TAX COURT

| | | |
|---|---|---|
| ATLANTIC MUTUAL INSURANCE COMPANY and Includible Subsidiaries, | ) | |
| Petitioner, | ) | |
| | ) | Docket No. |
| v. | ) | 25767-93 |
| | ) | Judge Chiechi |
| COMMISSIONER OF INTERNAL REVENUE, | ) | |
| Respondent. | ) | |

*STIPULATION OF FACTS*

Pursuant to Rule 91 of the Rules of Practice & Procedure of the United States Tax Court (Tax Court Rules), the parties stipulate for the purpose of this case that the following facts are true and correct and that the exhibits attached hereto are accurate copies of the original documents, which may be considered authentic. Except where the parties have specifically stipulated that the information in those exhibits is true and correct, the parties reserve the right to introduce other evidence consistent with the following facts either to corroborate or to rebut the truth and/or accuracy of the information in those exhibits. All evidentiary objections are waived unless reserved or expressed herein.



1. Atlantic Mutual Insurance Company ("Atlantic") is the common parent of an affiliated group of corporations within the meaning of IRC Section 1504(a)[1] which filed consolidated federal income tax returns for the taxable years involved in the petition, 1987 and 1988, with the office of the Internal Revenue Service ("Service") in Holtsville, New York. The relevant portions of such returns are annexed and marked as Exhibits 1-A and 2-B. In addition, Atlantic filed an amended return for the taxable year 1988 with the same office of the Service, a copy of the relevant portion of which is annexed and marked as Exhibit 3-C. Each party reserves the right to supplement Exhibits 1-A through 3-C. At the date of filing the petition herein, Atlantic's principal place of business was located in Madison, New Jersey.

2. Respondent timely issued a notice of deficiency to petitioners[2] on September 22, 1993, a copy of which is annexed and marked Exhibit 4-D, determining a deficiency of corporate federal income tax in the amount of $519,987 for petitioner's taxable year 1987 and $610 for petitioner's taxable year 1988. Petitioner did not petition the latter deficiency in tax.

3. Atlantic was organized under the laws of New York in 1842 as a mutual marine insurer. Atlantic limited its insurance underwriting activities to ocean marine

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[1] All references to "IRC" are to the Internal Revenue Code of 1954, as amended and in effect in these years, or to the Internal Revenue Code of 1986, as amended and in effect in these years.

[2] Hereinafter, petitioners shall be referred to as "petitioner."

business until 1931. After that date Atlantic expanded its insurance underwriting activities which for the years involved in the petition included most lines of insurance business available to a property and casualty ("P/C") insurer.

4. As permitted by then section 831(c), added by the Revenue Act of 1962, Atlantic elected for taxable years beginning after 1962 to continue to be subject to tax under subchapter L, part III, sections 831 *et seq.*, as a mutual marine insurer rather than under part II of such subchapter applicable to mutual insurers other than life and non-electing mutual marine insurers.

5. Centennial Insurance Company ("Centennial"), a P/C insurer wholly owned by Atlantic, was included in the consolidated federal income tax returns for the taxable years at issue filed by Atlantic. Since the issue raised in the petition herein applies equally to Centennial as to Atlantic, reference hereinafter to "petitioner," unless the context indicates otherwise, shall mean Atlantic and Centennial.

6. As shown in Exhibit 4-D, respondent determined that petitioner had understated its taxable income by the amount of $1,339,039 for its 1987 taxable year. That amount is the discount attributable to net additions that respondent determined had been made by petitioner in 1986 to its unpaid losses and unpaid loss adjustment expenses for pre-1986 accident years. Respondent maintains that this amount must be included in income under section 1023(e)(3)(B) of the Tax Reform Act of 1986, Pub. L. 99-514, section 1023(e)(3)(B) (the prohibition against fresh start for reserve strengthening). The schedules attached to Exhibit



4-D compute that adjustment to petitioner's taxable income according to Treas. Regs.[3] sections 1.846-3(c)(1) and (3). While those schedules do not include the computation of the adjustments to the Schedule O lines of business,[4] a schedule that computes the adjustment to petitioner's taxable income according to Treas. Regs. sections 1.846-3(c)(1) and (3) is annexed hereto as Exhibit 5-E.

7. To determine if petitioner had strengthened loss reserves as of December 31, 1986 for accident years 1985 and prior, respondent applied a mechanical test now set forth in Treas. Regs. section 1.846-3(c)(3) to petitioner's loss reserves at December 31, 1986, subject to the limitation set forth in Treas. Regs. section 1.846-3(c)(1).[5]

The result was that respondent found that petitioner had strengthened loss reserves at December 31, 1986 as follows:

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[3] References herein to "Treas. Regs." or "Prop. Regs." shall be to Regulations or Proposed Regulations, respectively, promulgated by the Department of Treasury.

[4] For a description of the differences between Schedules O & P, see paragraph 15, below.

[5] Treas. Reg. section 1.846-3(c)(1) provides, in pertinent part, that:

> The amount of reserve strengthening for an unpaid loss reserve may not exceed the amount of the reserve, including any undiscounted strengthening amount, as of the end of the last taxable year beginning before January 1, 1987.

| Line of Business | Reserve Strengthening (Weakening) |
|---|---|
| Auto Liability | $(10,559,423) |
| Other Liability | ( 1,279,374) |
| Workers' Compensation | 4,691,659 |
| Multiple Peril | 15,585,877 |
| Schedule O (1985) | ( 3,870,000) |
| Schedule O (pre-1985) | 1,984,000 |
| Total | $ 6,552,739 |

8. The portion of the above reserve strengthening (weakening) representing discount computed by respondent as shown in Exhibit 4-D and proposed to be included in petitioner's 1987 taxable income for purposes of the prohibition against fresh start for reserve strengthening is as follows:

| Line of Business | Fresh Start Adjustment |
|---|---|
| Auto Liability | $(1,211,842) |
| Other Liability | ( 309,970) |
| Workers' Compensation | 1,211,652 |
| Multiple Peril | 1,783,897 |
| Schedule O (1985) | ( 239,446) |
| Schedule O pre-1985) | 104,748 |
| Total | $ 1,339,039 |

9. The formula set forth in the Treas. Reg. section 1.846-3(c)(3), applicable to unpaid losses as of



December 31, 1985, was applied by respondent by line of business to each pre-1986 accident year contained in the line of business. That formula is: December 31, 1986 unpaid losses by line of business by each pre-1986 accident year, less the net amount of the December 31, 1985 unpaid losses by line of business by accident year reduced by payments during 1986 on the December 31, 1985 unpaid losses by line of business by accident year. If the formula produced a positive number for a given accident year, that amount was reserve strengthening. If the formula produced a negative number for a given accident year, that amount was reserve weakening. The amount of strengthening for a given pre-1986 accident year was, in all events, limited to the amount of the December 31, 1986 unpaid losses for that accident year.

10. Respondent did not propose any reserve strengthening (weakening) adjustment to petitioner's estimates of its December 31, 1986 unpaid losses for the accident year 1986.

11. During the years involved herein, petitioner was (and currently is) licensed to do a P/C insurance business in all states of the United States, the District of Columbia, Puerto Rico and the United Kingdom. In addition, petitioner had (and continues to have) operations in Canada and the Netherlands.

12. P/C insurers must file an Annual Statement in the format prescribed by the National Association of Insurance Commissioners ("NAIC") with the state insurance commissioner for each state in which the P/C insurer is licensed to do business. The NAIC Annual

Statement accounting principles are generally incorporated, with qualification, into the IRC sections applicable to P/C insurers, specifically including IRC section 832(b)(1)(A) and section 846(f)(3). A primary purpose of the NAIC Annual Statement is to provide the state insurance commissioner information about the P/C insurer's financial condition.

13. For the years 1985 through 1993, the NAIC Annual Statement included a balance sheet, statement of income, a capital and surplus account, statement of cash flow, an underwriting and investment exhibit, historical data, numerous schedules and responses to questions, as well as information on premiums, losses, and dividends to policyholders. Petitioner filed its NAIC Annual Statements with the insurance department of each State in which it was licensed to do an insurance business for the years 1985 through 1993.

Copies of Annual Statements of petitioner for the years 1985, 1986, 1987, 1988, and 1993 are annexed hereto and marked as follows:

| *EXHIBIT NUMBER* | *YEAR* | *COMPANY* |
|---|---|---|
| 6-F | 1985 | Atlantic |
| 7-G | 1985 | Centennial |
| 8-H | 1986 | Atlantic |
| 9-I | 1986 | Centennial |
| 10-J | 1987 | Atlantic |
| 11-K | 1987 | Centennial |
| 12-L | 1988 | Atlantic |
| 13-M | 1988 | Centennial |
| 14-N | 1993 | Atlantic |
| 15-O | 1993 | Centennial |



14. P/C insurers report on their Annual Statements estimates of amounts (including unpaid losses and unpaid loss adjustment expenses) that they expect to pay in the future for, or in respect of, losses that have already occurred. These estimates are commonly called "loss reserves" or simply "reserves."[6] P/C insurers were (and are) required to maintain reserves estimated to be sufficient in amount 1) to ensure the payment of claims by insureds and third parties that have occurred but not yet been paid by or not yet been reported to the insurer; and 2) to enable the insurer to pay for the costs of resolving, i.e., adjusting, such claims. The amounts of such reserves were required to be determined at the date, typically December 31, as of which the Annual Statement was required to be prepared.

15. Generally, P/C insurers account for loss reserves by separate lines of business and report statistics for each line by accident year. A line of business is a category used for reporting, among other things, losses on the basis of the insurer's Annual Statement. An accident year generally is the calendar year in which the incident occurs giving rise to a claim. Schedules O and P of the Annual Statement contain data on losses by accident year by line of business. Schedule P includes lines of business that often generate longer term liabilities for losses ("long-tailed lines" of business).

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[6] IRC section 832(c)(4) allows P/C insurers a deduction for "losses incurred," a portion of which is comprised of estimated unpaid losses. Unpaid losses are estimates of amounts of costs that will be paid in the future on loss events that have occurred, and they are commonly called "reserves."

16. Petitioner's reserves for unpaid losses consisted of three elements: 1) Estimates of the amounts to be paid on claims reported to petitioner (case reserves); 2) Estimates of amounts to be paid on losses which had occurred but which had not yet been reported to petitioner (Incurred But Not Reported or simply "IBNR" reserves); 3) Estimated amounts to be paid in the course of settling or otherwise resolving the losses included in (1) and (2) (reserves for loss adjustment expenses ("LAE")).[7]

17. P/C insurers use a wide range of approaches to estimate loss reserves, often relying on different approaches for different lines of business offered by the same P/C insurer. Petitioner objects to this paragraph as irrelevant.

18. P/C insurers generally establish case reserves by using estimates of individual claims made by individual claims adjusters, whose estimates are usually revised over time according to the available information and individual judgment and experience of the adjuster.

19. Although a P/C insurer knows that IBNR losses have occurred, by definition, the insurer does not have information about the loss events on which to base an estimate of the amount of each loss. Accordingly, the insurer must use another method according to its judgment

[7] As of January 1, 1987, for federal income tax purposes, P/C insurers include unpaid LAE as part of their unpaid losses under IRC § 832(b)(5) and reference to "losses" hereinafter shall be deemed, unless the context requires otherwise, to include LAE.



and experience rather than individual case estimates to determine its IBNR reserves.

20. For Annual Statement purposes, P/C insurers use a multitude of methods for estimating IBNR reserves. Some P/C insurers estimate IBNR reserves by estimating ultimate losses to be incurred for an accident year projected by "link ratios,"[8] then subtracting paid losses to date and case estimates of reported losses. The remainder is treated as the IBNR reserve. Other P/C insurers' estimates are based on past experience developing the IBNR reserve as a percentage of earned premiums, which percentage is applied to current year earned premiums. Another method is to project IBNR reserves based upon past accident year data by link ratios. Still another method is simply to determine the dollar value of late reported losses in prior taxable years and, using judgment and experience, translating that dollar value to a dollar value for the current IBNR reserve. Petitioner objects to this paragraph as irrelevant.

21. P/C insurers compute reserves for unpaid loss adjustment expense (LAE) reserves in a variety of ways. Unpaid LAE are commonly divided between: (a) allocated (ALAE) and (b) unallocated (ULAE). Unpaid ALAE consists of expenses which can be assigned to individual claims (e.g., legal fees and costs), whereas unpaid ULAE (e.g., rent allocable to the Claims Department) cannot be assigned to a specific claim.

[8] The "link ratio" method assumes that recorded amounts grow in a stable manner from one period of development to another. This method uses the growth rates (called "link ratios" or age-to-age development factors) to project final values for losses.

22. To estimate unpaid LAE reserves, P/C insurers often use a formula based on the ratios of allocated LAE payments to loss payments and of unallocated LAE payments to loss payments.

23. Exhibit 16-P annexed hereto sets forth the amounts of unpaid losses estimated by petitioner per its Annual Statements for 1985 and 1986, respectively. Exhibit 17-Q annexed hereto sets forth the amounts of loss adjustment expenses estimated by petitioner per its Annual Statements for 1985 and 1986,[9] respectively.

24. Exhibit 18-R annexed hereto accurately sets forth the amounts that petitioner paid in subsequent years through 1993 in respect of the unpaid losses (and loss adjustment expenses) described in Exhibit 16-P and 17-Q and paragraph 23, above, and the estimated amounts of such losses (and loss adjustment expenses) remaining unpaid at December 31, 1993. The aggregate of the amounts paid and estimated amounts remaining to be paid as of December 31, 1993 shown in Exhibit 18-R exceed the estimated unpaid losses at December 31, 1985 and 1986 by $84,598,000 and $88,847,000, respectively. Thus, as of December 31, 1993, both the December 31, 1985 and the December 31, 1986 loss reserves were underestimated as of December 31, 1985 and December 31, 1986. Thus, petitioner's aggregate December 31, 1986 loss reserves, on a hindsight basis through December 31, 1993, were, from an actuarial standpoint, estimated to be more inadequate by $4,249,000 when compared to petitioner's aggregate

[9] The 1986 unpaid losses include those for the accident year 1986.



December 31, 1985 loss reserves. The estimated amount of increased inadequacy is the excess of the underestimation in the 1986 reserves, $88,847,000, over the underestimation in the 1985 reserves, $84,598,000, as of December 31, 1993. The amounts of underestimation were deducted for federal income tax purposes on or before December 31, 1993. Respondent objects to this paragraph and this exhibit as irrelevant.

26. Petitioner's unpaid losses consisted predominantly of case reserves. Case reserves were the aggregate of estimates of the amounts to be paid on each individual claim reported to petitioner.

27. Typically, when a claim was reported to petitioner, it was assigned to a claims adjuster who promptly evaluated the available information, checked coverage, investigated facts, determined the injury or damage, created the claim file, assigned a claim number, made sure that the claim was entered in petitioner's data processing system, and attempted to resolve the claim. The claims adjuster, based upon experience and judgment, was required to estimate the ultimate amount, if any, payable by petitioner, i.e., the case estimate.

28. The individual case estimates were made by individual claims adjusters in petitioner's Claims Department, or independent claims adjusters, from data derived from loss reports to and policy files of petitioner, taking into account petitioner's prior experience with similar claims. Estimates of the amount of each claim were made independently of other current claims and were based upon the facts and circumstances of each such claim. When

additional information was reported to petitioner on an individual claim, the case estimate was reevaluated, but not necessarily changed, by the claims adjuster. In every case, petitioner's system scheduled each claim for reexamination at six month intervals.

29. As described above, petitioner's case reserves were established using the same methodology as of December 31, 1985 and as of December 31, 1986. Management of petitioner did not attempt in any way to influence estimates made, or to be made, by the individual adjusters in petitioner's Claims Department or by independent claims adjusters employed by petitioner as independent contractors in establishing petitioner's case reserves as of either December 31, 1985 or December 31, 1986. Petitioner's case reserves reflected in its Annual Statements for 1985 and 1986 amounted to $255,655,141 and $277,705,661, respectively.

30. Petitioner's IBNR reserves were estimated by its Actuarial Department using a so-called "counts and averages" methodology. The methodology was applied separately to each line of insurance business. The number of claims reported in years after the accident year was determined for prior accident years. These counts were used to project the number of claims which would be reported after December 31st for each accident year included in the current loss reserve. Based on historical data, the average cost per late reported claim was also projected. The projected number of claims was then multiplied by the projected average costs per claim to establish a total indicated IBNR reserve for each individual line of business. The amounts thus determined for each individual line of



business were in some cases increased and in others decreased based upon actuarial quarterly reviews of the loss reserves for the prior year. The amounts of the increases and/or decreases were judgmental and determined by senior management. In some instances, the amounts were intended to correct perceived underestimates or overestimates of case reserves in a particular line of business. The net amounts of management adjustments to IBNR were a reduction of $1,200,000 and $100,000 for 1985 and 1986, respectively. The above methodology and judgmental factors were used for each line of insurance business for each of the years 1985 and 1986. In this manner, petitioner established 1985 and 1986 IBNR reserves of $93,713,687 and $111,708,986, respectively. Annexed hereto and marked Exhibit 19-S are Atlantic's schedules showing the adjustments to the actuarially determined 1985 and 1986 IBNR reserves. Annexed hereto and marked Exhibit 20-T are Centennial's schedules showing the adjustments to the actuarially determined 1985 and 1986 IBNR reserves.

31. Petitioner's ALAE reserves for 1985 and 1986 were established partly by individual case estimate, partly by formula, and partly by judgmental factors.

32. Beginning with claims open at December 31, 1984, petitioner's claims adjusters estimated the legal expense portion of ALAE on an individual case basis for those claims involved in litigation. Thus, legal expenses on claims involved in litigation and open at December 31, 1985 and at December 31, 1986 were estimated on a case basis.

33. Prior to 1984, a ratio of paid ALAE to paid losses for the three years prior to the current year, i.e., 1980, 1981 and 1982 for 1983, was determined. The unpaid ALAE were determined by applying eighty-five percent of this ratio to case estimates and 100% of the ratio to IBNR. The sum of the two amounts was the unpaid ALAE. This procedure was used for 1984, 1985 and 1986 IBNR. For 1984, 1985 and 1986 case reserves, the paid legal expenses were excluded from the paid ALAE in the paid to paid ratio applied to case estimates of unpaid losses, since case estimates of such expenses were separately determined.

34. Petitioner's methodology and assumptions for determining the ultimate paid to paid ratio and projected ultimate losses, quarterly losses and ALAE reviews were the same for 1984, 1985 and 1986. After the amounts of unpaid ALAE were determined as described in paragraphs 32 and 33, petitioner's senior management increased the 1985 and 1986 ALAE reserves and prior year ALAE reserves by reference to quarterly loss and ALAE reviews. The reviews related to the projected development of the prior year end loss and ALAE reserves. For purposes of the quarterly reviews, the ALAE paid to paid ratios were projected using link ratios to the ultimate paid to paid ratio. This projected ultimate paid to paid ratio was applied to the projected ultimate losses to estimate the ultimate ALAE. Based upon the indicated amount of ultimate ALAE, petitioner's senior management estimated the need for an addition to the ALAE reserve.

35. Petitioner established ULAE reserves by formula. A ratio of three years' paid ULAE to paid losses was applied to 50% of case reserves and to 100% of IBNR



reserves. The same formula was used for the computation of 1985 and 1986 ULAE reserves.

36. Based on the facts described in paragraphs 31, 32, 33, 34 and 35, above, petitioner established LAE reserves amounting to \$72,317,450 and \$84,066,519, for the years 1985 and 1986, respectively. Attached as Exhibit 21-U are petitioner's schedules detailing the computation of unpaid LAE adjustments for Atlantic, Centennial and, for 1986, Atlantic Reinsurance Company, also.

37. Petitioner's data processing system automatically debited the applicable loss reserve on an individual claim whenever a payment was made on the claim whether the payment was in full satisfaction of the claim or a partial payment. However, as part of approving the payment, the responsible claim adjuster was required to determine whether an adjustment should be made to the loss reserve applicable to the claim. If the adjuster determined prior to, at the same time as or after the payment that the loss reserve should be changed, the adjuster could put through the system a change in the loss reserve, decreasing it by an amount greater than the payment, by an amount less than the payment or even increasing the loss reserve to an amount greater than that before the payment. Where a payment closed a loss, the unpaid amount was reduced to zero without regard to the amount of the payment.

38. Petitioner's total aggregate loss reserves for 1985 and 1986, respectively, amounted to \$421,686,277 and \$473,481,163, respectively. These totals can be derived from Exhibits 16-P and 17-R. The total

aggregate loss reserves for pre-1986 accident years in the 1986 total aggregate loss reserve of $473,481,163 was $300,181,334 (comprised of the sum of case reserves in the amount of $199,944,208, IBNR reserves of $41,329,506, and unpaid LAE reserves of $58,907,620). As more specifically stipulated in paragraphs 27 through 37, the basic methodologies and assumptions used to arrive at these total reserves as of December 31, 1985 and December 31, 1986, respectively, were the same.

39. While respondent reserves the issue as to whether petitioner engaged in reserve strengthening, respondent admits that petitioner's 1985, 1986, 1987 and 1988 loss reserves, included in its deduction for losses incurred for such years, were, in the aggregate, reasonable, accurately estimated, and complied with the provisions of section 832(b)(5) (and for discounting purposes, section 846) and Treas. Regs. sections 1.832-4(a)(5) and 1.832-4(b), and that petitioner accurately discounted those reserves under § 846. Respondent objects to this paragraph as irrelevant.

40. In the examination of petitioner's returns for the tax years 1986, 1987 and 1988, respondent's agent tested petitioner's unpaid loss reserves for its Schedule P lines of business. Those tests showed that, as of 1988, in the Schedule P lines of petitioner's business, petitioner was overreserved for its losses, but underreserved for its LAE. Because those tests showed, as of December 31, 1988, a deficiency in unpaid LAE in excess of the redundancy for unpaid losses, respondent allowed a deduction for petitioner's loss reserves and LAE reserves as claimed on petitioner's returns for those years. Respondent objects to this paragraph as irrelevant.



41. Petitioner did not increase its loss reserves for 1985 and prior accident years included in its aggregate loss reserves for 1986 for tax motivated purposes. Respondent objects to this paragraph as irrelevant.

42. To petitioner's Actuarial Department, the term "reserve strengthening" meant a change made to the reserves to accomplish an increase in the adequacy (or a decrease in the inadequacy) of such reserves. Petitioner objects to this paragraph as irrelevant.

43. To petitioner's Actuarial Department, the term "reserve weakening" meant a change made to the reserves which decreased the adequacy (or increased the inadequacy) of such reserves. Petitioner objects to this paragraph as irrelevant.

44. As a result of Treas. Reg. § 1.846-3, respondent's examining agent did not examine or attempt to examine individual claim records maintained by petitioner's Data Processing Department in determining whether petitioner strengthened reserves within the meaning of § 1023(e)(3)(B), Tax Reform Act of 1986. Petitioner did not request that respondent undertake such an examination, nor did petitioner offer to do so for this purpose. Respondent objects to this paragraph as irrelevant.

45. Petitioner did (and continues to) maintain detailed claim by claim records on electronic data processing equipment. Petitioner may access each individual record of all reported and directly underwritten claims by appropriate software programs maintained by petitioner. Neither IBNR nor some claims on business which petitioner

assumed by way of reinsurance can be so accessed. Respondent objects to this paragraph as irrelevant.

46. Annexed and marked as Exhibits 22-V through 25-Y are schedules, derived from Exhibit 4-D that compute the reserve strengthening (weakening) determined by respondent for the Automobile Liability, Other Liability, Workers' Compensation and Multiple Peril lines of petitioner's business by accident year and by type of unpaid loss reserve (case and IBNR or LAE).

47. Attached as Exhibit 26-Z is a copy of the preamble to the Regulation, published on September 4, 1992. 57 F.R. 48562 (1992-2 C.B. 146, 148).

48. Attached as Exhibit 27-AA is a copy of the preamble to the Proposed Regulation. Notice of Proposed Rule Making (FI-139-86), 56 F.R. 20161 (1991-2 C.B. 946, 947).

49. The Proposed Regulation was based on Notice 88-100 (the Notice), 1988-2 Adv.Sh.Ed.C.B. 471, a copy of which is attached as Exhibit 28-AB.

50. In discovery in this case, petitioner has requested that respondent produce any document supporting the following statements in the preamble to that Proposed Regulation:

> Because the test is applied to each unpaid loss reserve, rather than to each separate loss, the test does not take into account the fact that a particular loss payment may exceed, or be less than, the initial



> estimate of the loss for which the payment was made. This may result in a failure to include, or an erroneous inclusion of, certain amounts in the computation of reserve strengthening for a particular reserve. For most unpaid loss reserves, however, any potential inaccuracies are likely to offset each other in the aggregate.

Respondent has not produced any document that supports those statements, even though respondent's files contain three memoranda relating to the above statements.

51. For the 1977 accident year in its Auto Liability line of business, petitioner maintains that it held reserves of $44,278 (which include case reserves of $40,026 and unpaid LAE determined by a paid to paid ratio method of $4,252) for unpaid losses as of December 31, 1985, which petitioner maintains were still unpaid and included in unpaid losses at December 31, 1986 in Exhibit 12-L in the amount of $58,918. Respondent objects to this paragraph as irrelevant.

Respectfully submitted,
STUART L. BROWN
Chief Counsel
Internal Revenue Service

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|---|---|
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| Date: January 5, 1995 | Date: January 6, 1995 |



UNITED STATES TAX COURT

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|---|---|
| ATLANTIC MUTUAL INSURANCE COMPANY and Includible Subsidiaries, | ) |
| Petitioners, | ) |
| v. | ) Docket No. 25767-93 ) Judge Chiechi |
| COMMISSIONER OF INTERNAL REVENUE, | ) |
| Respondent. | ) |

*FIRST SUPPLEMENTAL STIPULATION OF FACTS*

Pursuant to Rule 91 of the Rules of Practice & Procedure of the United States Tax Court (Tax Court Rules), the parties stipulate for the purpose of this case that the following facts are true and correct and that the exhibits attached hereto are accurate copies of the original documents, which may be considered authentic. Except where the parties have specifically stipulated that the information in those exhibits is true and correct, the parties reserve the right to introduce other evidence consistent with the following facts either to corroborate or to rebut the truth and/or accuracy of the information in those exhibits. All evidentiary objections are waived unless reserved or expressed herein.

52. Annexed hereto and marked Exhibit 29-AC is a copy of excerpts from petitioner's 1984 claims manual, as provided to respondent in response to informal interrogatories.

53. The sum of the net adjustments made by petitioner's management to petitioner's 1986 LAE reserves in the manner described in paragraph 34 is as follows:

| | |
|---|---|
| "Safeguard (Pollution)" | 450,000 |
| "1986 Bulk Strengthening" | 2,700,000 |
| TOTAL | $3,150,000 |

(Exhibit 21-U, "The Atlantic Companies, LAE Reserves, December, 1986")

54. Annexed hereto and marked respondent's Exhibit AD is a copy of the Congressional Record containing remarks of Senator Malcolm Wallop (R-Wyo) on the limitation of fresh start for reserve



strengthening and the accompanying Conference Committee Report. Petitioner objects to this paragraph and exhibit as irrelevant.

Respectfully submitted,
STUART L. BROWN
Chief Counsel
Internal Revenue Service

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|---|---|
| /s/ John S. Breckinridge | By: /s/ Phillip A. Pillar |
| JOHN S. BRECKINRIDGE, JR. | PHILLIP A. PILLAR |
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Date: February 10, 1995 Date: February 9, 1995

UNITED STATES TAX COURT

| | | |
|---|---|---|
| ATLANTIC MUTUAL INSURANCE COMPANY and Includible Subsidiaries, | ) | |
| Petitioners, | ) | |
| | ) | Docket No. |
| v. | ) | 25767-93 |
| | ) | Judge Chiechi |
| COMMISSIONER OF INTERNAL REVENUE, | ) | |
| Respondent. | ) | |

*SECOND SUPPLEMENTAL STIPULATION OF FACTS*

Pursuant to Rule 91 of the Rules of Practice & Procedure of the United States Tax Court (Tax Court Rules), the parties stipulate for the purpose of this case that the following facts are true and correct and that the exhibits attached hereto are accurate copies of the original documents, which may be considered authentic. Except where the parties have specifically stipulated that the information in those exhibits is true and correct, the parties reserve the right to introduce other evidence consistent with the following facts either to corroborate or to rebut the truth and/or accuracy of the information in those exhibits. All evidentiary objections are waived unless reserved or expressed herein.



55. Annexed hereto and marked as Exhibit 30 is a copy of the expert witness testimony of Irene K. Bass submitted on behalf of petitioners.

56. Annexed hereto and marked as Exhibit 31 is a copy of the expert witness testimony of W. James Mac Ginnitie submitted on behalf of petitioners.

57. Annexed hereto and marked as Exhibits AE and AF, respectively, is a copy of the expert witness testimony of Raymond S. Nichols submitted on behalf of respondent.

58. Annexed hereto and marked as Exhibits AG, AH, and AI, respectively, is a copy of the expert witness testimony of Ruth E. Salzmann submitted on behalf of respondent.

59. The parties accept the qualifications of the expert witnesses as set forth in the above-marked exhibits.

Respectfully submitted,
STUART L. BROWN
Chief Counsel
Internal Revenue Service

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|---|---|
| /s/ John S. Breckinridge | By: /s/ Phillip A. Pillar |
| JOHN S. BRECKINRIDGE, JR. | PHILLIP A. PILLAR |
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| Date: Feb. 22, 1995 | Date: February 23, 1995 |



# Report on Reserve Strengthening

Irene K. Bass
December 9, 1994

## Purpose

The purpose of this report is to (1) provide background discussion on the processes used by property-casualty (PC) insurers to set reserves[1]; (2) provide background on "reserve strengthening" as the term is used in the context of aggregate loss and loss adjustment expense (LAE) reserves established by PC insurers and reported on their Annual Statements and to provide examples where reserve strengthening exists and where it does not; (3) define reserve strengthening and identify its chief characteristics; and (4) explain why the IRS definition of reserve strengthening does not describe reserve strengthening in the sense that it is used in the PC insurance industry. In the course of doing this, I will incorporate

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[1] In this report, *reserve* refers to *loss and loss adjustment expense reserve,* unless otherwise noted. The term refers to the provision for all liabilities for claims incurred, whether reported to the insurer as of the valuation date or not. *Case reserve* refers to individual claim estimates determined by claims adjusters on claims which have been reported to the insurers. *IBNR reserve* refers to a provision for *i*ncurred *b*ut *n*ot *r*eported claims. IBNR can also include a bulk provision for claims that have been closed as of the valuation date but which will reopen in the future. *Case development reserve* refers to a provision for the deficiency (or redundancy) in the aggregate of the case reserves. The case development reserve is sometimes included within the IBNR reserve and not separately identified. The term reserve is the sum of the case reserves, IBNR reserves, and the case development reserves (whether separately identified or included in the broader definition of IBNR).

comments on the decision in the case of *Western National Mutual Insurance Company v. Commissioner of Internal Revenue*, 102 T.C. 338 (1994).

In the course of exploring the concept of reserve strengthening as the term is used in the PC insurance industry and as proposed to be used by the IRS, I provide examples that constitute reserve strengthening and examples that the IRS would consider to be reserve strengthening but which are the result of the routine, periodic re-estimation process inherent in the setting of loss reserves for a PC insurer.

Biographical Summary and Qualifications

My formal education includes a bachelor of arts degree, *magna cum laude*, in mathematics and German from Bowling Green State University and a master of science degree in mathematics from Northeastern University.

I am a Fellow of the Casualty Actuarial Society (CAS) by examination; I am a Fellow of the Canadian Institute of Actuaries, also by examination; and I am a Member of the American Academy of Actuaries.

I have been professionally active continuously since the time of earning my fellowship designation in the CAS and the following summarizes the major aspects of my activity. I served as chair of the Textbook Steering Committee of the CAS from 1985 through 1989, which resulted in the 1989 publication of the first comprehensive textbook on casualty actuarial science. In 1987, I served as president of a CAS regional affiliate, Casualty Actuaries of Greater New York. From 1986 through 1989, I served a three year term as an



elected member of the CAS Board of Directors. From 1989 through 1992, I served a three year term as vice president - continuing education, with responsibility for the continuing education programs and publications of the CAS. In 1992 I was elected by the CAS membership to serve one year as president, and I completed that service in November 1994. During 1992-1993, I also served on the Board of Directors of the CAS and the Board of Directors of the American Academy of Actuaries. During 1994-1995, I will chair the quarterly meetings of the CAS Board of Directors. I have also written several papers contained in various CAS publications, made presentations at actuarial meetings and seminars, and served on various other professional committees.

My work experience includes more than 21 years in actuarial and insurance management positions where I was involved in ratemaking and reserving activities for both primary insurance and reinsurance. For 14 years, I held various positions at three different insurance or reinsurance companies, my most recent position being that of senior vice president at the Crum & Forster Insurance Group. In that position, I served as chief actuary for the personal lines division of Crum & Forster doing business as Crum & Forster Personal Insurance and, at the same time, I had responsibility for underwriting systems and product development.

In 1987, I joined William M. Mercer, Incorporated as a consulting actuary in its PC actuarial practice located in the New York City office. I began as a principal and am currently a managing director of Mercer. During my seven years at Mercer, I have provided consulting services in

reserving, ratemaking, and insurance management related areas to a wide variety of clients including insurers, reinsurers, insurance regulatory authorities, and self-insured entities. My complete biographical sketch is attached as Appendix A to this report.

Section (1) - Background on the Reserve Setting Process for PC Insurers.

*Reserves: Basic Terms and Procedures*

Loss and LAE reserves are liabilities required to be held by a PC insurer to make sure the company has set aside the money it will need to pay claims that have occurred but have not yet been paid or perhaps not even yet reported to the insurer as of the valuation date.[2] PC insurers must hold such monies because, according to insurance statutory accounting, as of the valuation date they have been permitted to take as income the portion of premium allocated to the expired portion of the policies written in the current or prior years; however, not all of the claims arising out of the expired portions of those policies, *i.e.*, those occurring in accident years[3] ending on or

[2] This report assumes annual valuations coincident with the valuation date of the Annual Statement, which is usually December 31 of each calendar year. Insurers likely re-estimate reserves at interim valuation dates, but the only valuation relevant to the issue at hand is the year-end annual valuation.

[3] *Accident year* is the year in which the insured occurrence took place, regardless of when the accident was reported to the insurer. For example, an auto accident that occurred on December 28, 1993 may not be reported to the insurer until January 2, 1994. In this case, the accident year



before the valuation date, will have been paid or even reported to the insurer as of the valuation date.

For an insurer that is a going concern, at any given valuation date, not all the claims have been reported or exactly determined through the case reserve setting process, and so the insurer cannot record an amount certain for these liabilities but must, instead, estimate them. The reserves of a PC insurer are usually composed of the sum of (1) individual estimates of losses and LAE established by the insurer for claims already reported to it, called case reserves, (2) an aggregate provision for all loss and LAE amounts that will be paid on claims that have already been incurred but have not yet been reported to the insurer (the IBNR reserves), and (3) an aggregate provision for expected future changes in the case loss and LAE reserves arising out of the imprecision in the case reserve setting process, sometimes called a case development reserve.[4]

PC insurers use a wide range of approaches to estimate reserves, often relying on different approaches for different lines of business within the same company. For Annual Statement purposes, reserve setting procedures sometimes establish total reserves indirectly by first estimating ultimate losses and then subtracting the paid losses to arrive at the total reserve. (Or, alternatively, by first estimating ultimate

is 1993, but the report year is 1994. Although an accident year can be defined to be any 12 month period, only accident years that run concurrently with calendar years are considered in this report.

[4] See footnote 1 for an explanation of terms as used hereafter in this report.

losses and then subtracting the sum of the paid losses and the case reserves to arrive at the IBNR reserve which would include a provision for case development.)

A number of insurers, however, establish reserves directly, for example, as the sum of case reserves plus some amount for IBNR reserves (where the IBNR may be a function of time and some other variable such as earned premium or case incurred losses). Regardless of whether reserves are set directly or indirectly, all approaches to estimating loss reserves rely on an element of judgment.

*Setting Reserves in a "Perfect World"*

As background, it is relevant to consider how the reserve setting process operates in a "perfect world." In a perfect world, the insurer sets completely accurate prices (*i.e.*, premiums). This means the insurer anticipates perfectly the losses and expenses associated with the risks it intends to write for a given time period and includes these provisions in its premiums in a manner which permits the attainment of the target profit.

In this perfect world, at the time each claim is reported to the insurer, the claims adjuster establishes a case reserve which is exactly equal to the amount that will be ultimately paid on the claim. Hence, the only provision that needs to be estimated in bulk is the IBNR provision (which can be established either directly or indirectly as discussed earlier) which relates to the claims which have been incurred but which are still unreported as of the valuation date. Because we are assuming perfect case reserve estimates, there is no need to include a provision for case reserve development.



In this world of perfect information, there are no changes needed to the estimated ultimate incurred losses after the initial valuation. When a claim is reported after the initial valuation date, the IBNR is reduced by exactly the amount of the newly established case reserve for the emerged claim until the IBNR reserve reaches zero at the time when all claims have been reported. When a claim is paid, the case reserve is reduced to zero and the paid amount is exactly equal to the prior existing case reserve. In such a world, the term *reserve strengthening* has no meaning.

*Setting Reserves in a World of Uncertainty and Imperfect Information*

The insurance world, however, is not perfect. At the time an insurer sets its premiums, it does so prior to knowing exactly how many loss and LAE dollars it will need to pay out for the risks it intends to insure. There can be a great deal of uncertainty about the magnitude of the losses and LAE arising out of the contingent events for which the premiums provide coverage. At the time of the initial valuation of reserves, information received by the insurer is incomplete, imperfect, and still subject to a number of external influences which may result in a need for the insurer to change, from valuation to valuation, its estimate of what the reserves otherwise would have been.

Any number of things can have an impact on the insurance ratemaking and reserving processes, as time passes, causing PC insurers to change their estimates of reserves from what they otherwise would have been. For example, if prices originally thought to be adequate turn out to be inadequate, the insurer may need to set subsequent valuations of reserves

at amounts higher than what they otherwise would have been under the original assumption of premium adequacy.[5] In the case where the insurer assumes the premiums to be adequate at the time of the first valuation, the insurer may have calculated its reserves based on the provision for incurred losses underlying the premium it charged. When it eventually, at some later valuation date, finds the loss experience is emerging at a level higher than originally anticipated, it concludes that the premiums are inadequate and that the provision for losses included in the premium is insufficient. Hence, the insurer will need to establish reserves that are greater than what they would otherwise have been, had the premiums not turned out to be inadequate.[6]

It is not unusual for claims experience to emerge in a manner that shows premiums to be inadequate and for the insurer to need to take a number of corrective actions to increase its reserves from what they otherwise would have been. There are a number of corrective actions that the insurer may take to reflect this new increased claims emergence. For example, the insurer may review its emerging claims

[5] Prices could also turn out to be more than adequate, but since this would result in decreases to what reserves would otherwise have been, this would not lead to reserve strengthening, so this situation is not discussed here.

[6] In this scenario, the insurer initially believed its prices to be adequate, set its reserves based on that assumption, and declared the target profit on its Annual Statement and on its federal income tax return. In reversing its assumption about the adequacy of the premium, it will increase its reserves over the level at which they otherwise would have been established, and it will need to recapture the taxes already paid on the profit that is now reduced through these actions.



experience, increase its estimated ultimate incurred losses and, therefore, increase the amount of IBNR reserves it otherwise would have held. A second alternative would be for the insurer to review its individual case reserves and increase the amounts where appropriate to reflect a more adequate estimate of the case reserves; hence, it may not be necessary to increase the IBNR reserve from what it otherwise would have been if the case reserve changes have accounted for the needed additions. Or the insurer could do some of both in order to achieve the appropriate increase in the reserves from what otherwise would have been held.

In this imperfect insurance world, it could also be the case that premiums were set accurately but something early in the claims reporting process occurs which is out of step with expectations, leading the insurance company initially to underestimate its reserves. For example, it could be that the incidence of claims reported is initially lower than anticipated in the rates; that case reserves were initially set at levels which proved to be too low; or that the insurer underestimated the amount of required IBNR at the initial valuation. Each of these situations would need to be corrected by the insurer at a later valuation date and such correction will result in increases to what the reserves otherwise would have been.

As a final example of something that can operate in a world with imperfect information, suppose that premiums are established exactly accurately and loss reserving at the first valuation date is perfect. Suppose, further, that at some time after the first valuation, a court decision is handed down that changes the company's expectations with respect to the nature of the insurance coverage provided.

A situation such as this occurred in California where a house slid down a hill that was eroded during a sudden and severe rainstorm. The court held that the insurer had to pay not only for the replacement cost of the home, but it also had to pay for the replacement cost of the hill. This was a very new and different interpretation of homeowners coverage by the courts, which PC insurers could not have anticipated at the time of setting premiums, and which will require insurers to pay out more than they estimated as of the prior valuations. In this example, the insurer did everything correctly; it set its prices accurately and it set its reserves exactly. But the court's decision changed the insurer's expectations of the nature of the insurance coverage, and the insurer would now need to revise its prior estimates to reflect this new insurance environment.

*The Recursive Nature of Setting Reserves*

In the uncertain world of insurance, approaches to estimating reserves range from fairly mechanical to highly judgment-based methods. The method used for a particular line of business for a particular accident year is heavily dependent on the nature of the loss data available at the valuation date. Underlying all methods for estimating reserves, however, is the expectation that the estimates will not be perfectly correct for any accident year until all claims have been reported, closed, and paid. Hence, the reserve setting process is a recursive process which fully anticipates that changes, both favorable and adverse, in the estimates of the reserves will occur from valuation to valuation.

An example of a method which operates routinely with few anticipated revisions in assumptions from initial to final



valuation would be a method applied to a large book of auto physical damage claims. It would not be uncommon, for example, for a PC insurer to establish reserves based on the sum of a fixed dollar reserve amount per outstanding claim as of the valuation date (regardless of the actual value of each particular claim) plus a provision for IBNR based on this same average amount times an expected number of IBNR claims.

Even this simple, relatively mechanical method requires an amount of judgment, such as the judgment used to determine the per claim reserve amount. However, the expectation here is that few revisions to the reserves, either favorable or adverse, will be expected after the initial valuation since these claims settle so quickly as to make such a re-estimation mostly unnecessary.

A reserve setting method which is somewhat mechanical but which has a greater degree of judgment associated with it is a method that could be used to estimate the reserves for a large book of basic limits auto liability policies. Simple link-ratio methods are often used to estimate ultimate incurred losses and, hence, reserves with judgment overlaid to correct for some assumed or observed phenomenon not already reflected in the emerged loss development history.[7]

On the far opposite end of the spectrum are reserve setting techniques based largely on judgment. These methods are often used in situations in which the insurer has just begun to write a new type of policy and historical data are not yet

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[7] The illustrative example in Exhibit 3, to be explained later in the text, uses a link-ratio method of estimating ultimate incurred losses.

available or in which the loss data are so sparse and/or so volatile as to require a considerable amount of judgment to be infused into the process of estimating reserves. An example of this method would be in the area of estimating ultimate incurred losses for an insurer that writes environmental impairment liability insurance.

Regardless of the particular method used to estimate accident year reserves, there is still the expectation that subsequent valuations will require changes, both favorable and adverse, to the estimates of what the reserves otherwise would have been. These changes are normal and expected in the course of the development of loss experience from the initial valuation to the time the last claim is closed and paid. This type of change is very much a part of the routine, normal conduct of the business of PC insurance and rarely, if ever, results in a major change of methods and/or assumptions that produce the magnitude of change that may be associated with what is commonly referred to as reserve strengthening.

Section (2) - Background on Reserve Strengthening and Examples

*Uses of the Term Reserve Strengthening with Respect to Reserves in the Annual Statement*

Within the context of the reserve setting process, the term *reserve strengthening* is not a well-defined PC insurance or actuarial term of art to be found in PC actuarial, accounting, or insurance regulatory literature. This does not imply, however, that the characteristics of reserve strengthening cannot be identified, although the IRS takes a different view.



The fact that there is no single actuarial dictionary definition of reserve strengthening does not mean that the term cannot be defined in this context; and it does not mean that, because of the lack of an actuarial dictionary definition, *any* and *all* increases, however large or small, in reserves from what they otherwise would have been automatically constitute reserve strengthening.

Although the National Association of Insurance Commissioners (NAIC) does not specifically define this term with respect to reporting requirements for the filing of information in the Annual Statement for PC insurers, the Annual Statement does provide guidelines useful in identifying the characteristics of what PC actuaries refer to as reserve strengthening.

Annual Statement Schedule P Interrogatories require the disclosure of "any especially significant events, coverage, retention or accounting changes which have occurred which must be considered when making such [loss reserve] analyses." Such language, although it does not reference reserve strengthening (or weakening) by name, suggests that unusual and significant aspects associated with reserves changes are to be associated with reserve strengthening (or weakening) rather than the routine, normal, and very much expected increases and/or decreases to reserves from the application of the necessarily recursive reserve setting process that occurs from valuation to valuation.

The NAIC requires the Annual Statement to incorporate a statement of actuarial opinion on the adequacy of the reserves as an integral part of the Annual Statement. The accompanying instructions to the Annual Statement set forth

in writing in Paragraph 13 what had long been the understanding among PC actuaries with respect to reserve strengthening (or weakening). This language states:

> *The actuary should describe the actuarial assumptions and/or methods which have been used. If there has been any material change in the actuarial assumptions and/or methods from those previously employed, that change should be described in the statement of actuarial opinion by inserting a phrase such as: "A material change in actuarial assumptions (and /or methods) was made during the past year, but such change accords with accepted loss reserving standards."*

While this language does not specifically reference the term *reserve strengthening* (or weakening), it clearly references a material, significant change and does not refer to the valuation-to-valuation modifications that are inherent and expected in the recursive process of setting reserves as time passes.

In addition to the guidance from the Annual Statement, the characteristics of reserve strengthening can be identified by example. It would be possible to describe factually a scenario in which a PC insurer's reserves were increased from what they otherwise would have been and where there could be near universal agreement among PC actuaries and insurance regulators that reserve strengthening has occurred. Similarly, it would be possible to describe factually a different scenario in which a PC insurer's reserves were increased from what they otherwise would have been and



where there could be near universal agreement that there had been no reserve strengthening.

The distinguishing factor of the various types of increases in reserves from what they otherwise would have been which clearly represent cases of reserve strengthening and those increases in reserves from what they otherwise would have been which clearly do *not* represent reserve strengthening provide, in a broad sense, a working definition of reserve strengthening. The challenge lies in the range that exists "in between" examples clearly considered to be reserve strengthening and examples clearly considered not to be reserve strengthening. Just as the setting of reserves is based on judgment to some degree, the determination of whether a particular adjustment to reserves constitutes reserve strengthening is based on judgment applied to the specific facts, especially in the "in between" examples.

The fact that some judgment must be used to determine whether or not reserve strengthening has occurred in a given situation does not, in and of itself, negate the concept of reserve strengthening itself nor does it mean that this judgment should be replaced by mechanistic approaches to determining the presence or absence of reserve strengthening, which is the approach supported by the IRS.

The entire reserving process, including the judgment about the overall adequacy of reserves, which must be included in the actuarial opinion on reserves in the PC Annual Statement, is rooted in informed and studied judgments. Actuaries sometimes disagree about the adequacy of an insurer's total reserves; so it is no surprise that the determination of the presence of reserve strengthening is also

rooter in informed actuarial judgments. Suggesting that a totally mechanistic approach to determining the presence of reserve strengthening should replace the studied judgment of skilled actuaries in making that decision would be similar to requiring that the loss reserves themselves be calculated according to some rigid formula set out in a computer program. The reserve setting process would be ill served to be replaced by a set of rigid formulae, and so the process of determining the presence of reserve strengthening must follow suit.

PC actuaries, who may disagree on whether or not reserve strengthening has occurred in a particular situation, also may agree broadly on the general characteristics of what does (and, conversely, what does not) constitute reserve strengthening. It appears that the lack of a well recognized definition of reserve strengthening in PC insurance literature can be attributed to the recursive nature of the reserve setting process and the fact that identification of reserve strengthening is not a requirement of the normal process of setting reserves.

In the PC insurance industry, the determination of whether reserve strengthening has occurred is, ultimately a matter of actuarial judgment especially for the "in between" situations. While there may be disagreements about whether or not reserve strengthening has taken place in the "in between" situations, there would be far less disagreement among actuaries over the general characteristics of reserve strengthening. What is clear is that actuaries would agree that all net increases to reserves from what they otherwise would have been are not necessarily instances of reserve strengthening. The term *reserve strengthening* cannot, under



any uses of the term, be equated with all net increases to reserves from what they otherwise would have been. Some net increases constitute reserve strengthening; others do not.

*Colloquial Uses of the Term Reserve Strengthening*

One should be careful to distinguish reserve strengthening as that term is used by PC actuaries and the type of reserve strengthening that is sometimes references by persons who do not establish total loss reserves as presented in the Annual Statement of a PC insurer. Use of the term *reserve strengthening* can vary greatly among those responsible for setting only part of the reserve.

To a claims manager, reserve strengthening could mean a one-time review of all pending claim s(or some well-defined portion of all pending claims) for purposes of improving the degree of adequacy of case reserves and making changes (increases or decreases) where necessary to reflect a more accurate estimate of the expected ultimate payment of each claim. A claims manager's view of reserve strengthening is influenced by the fact that he/she is responsible only for the case reserves rather than the total reserves of the insurer.

Another example is the insurance financial executive who may refer to an increase in the overall level of IBNR reserves as reserve strengthening independent of any change in aggregate case reserves. This financial executive's view of reserve strengthening is influenced by the fact that he/she is responsible only for the IBNR, exclusive of the case reserves. Reserve strengthening can occur, however, only if one considers the combined net effect of changes to both case reserves and IBNR, for if one element of the reserve (*e.g.*, the

IBNR) increases from what it otherwise would have been, while the other (*e.g.*, the case reserves) decreases from what it otherwise would have been in an equal and offsetting amount, there is no reserve strengthening.

In addition to those mentioned above who would give part-wise meaning to the term *reserve strengthening*, there are those who have less of a technical background in PC insurance and who sometimes completely misuse the term reserve strengthening. Insurance analysts for investment firms, for example, occasionally refer to any increase in the reserve inventory from calendar period to calendar period as reserve strengthening. Suppose Company A had reserves of $800 million as of calendar year-end 1985, paid $650 million during calendar year 1986, and at calendar year-end 1986 now has $1,010 million in reserves. This phenomenon has sometimes been called reserve strengthening by the actuarially uninitiated even though this situation could represent reserve weakening.

Exhibit 1 presents detail for an example which illustrates this phenomenon. In this example, the estimated total incurred losses for each of accident years 1983 through 1985 have changed from the prior valuation, but the addition of the new accident year 1986 with its growth in premium and its attendant growth in estimated ultimate incurred losses causes the calendar year arithmetic to show the reserve changes from $800 million at year-end 1985 to $1,010 million at year-end 1986.

According to the interpretation of the insurance analyst described above, there would be reserve strengthening because the reserves increased from $800 million at year-end



1985 to $1,010 million at year-end 1986. According to the IRS, there would be reserve strengthening because the estimated ultimate incurred losses for accident years 1985 and prior change from $1,750 million as of year-end 1985 to $1,760 million as of year-end 1986. As will be explained later in this report, both are wrong. This is not an example of reserve strengthening.

Financial analysts frequently use the term reserve strengthening to mean an increase in the ratio of total year-end reserves to earned or written premium. This, too, is likely not to constitute true reserve strengthening. Exhibit 2 illustrates this situation. As of year-end 1985, the insurer's reserves are $1,295 million and the earned premium for 1985 is $610 million, resulting in a reserves-to-premium ratio of 2.12. During the years 1981-1985, this insurer's premiums were constantly adequate, resulting in approximately a 75% loss ratio each accident year.

In 1986, however, the insurer finds itself writing business which is far less adequately priced than in prior years and anticipates that its ultimate loss ratio will be 90% for accident year 1986. The insurer sets its 1986 reserves at a level that will produce this anticipated loss ratio. During calendar year 1986 the insurer pays claims on pre-1986 accident years but does not change any of the pre-1986 accident year estimates of ultimate incurred losses. At year-end 1986, the reserve is $1,595 million and the 1986 earned premium is $700 million producing a reserves-to-premium ratio of 2.28. According to some financial analysts, this increase in the reserves-to-premium ratio constitutes reserve strengthening although the estimates of ultimate incurred losses for pre-1986 accident years have not changed at all

and the reserves for pre-1986 accident years have not changed from what they previously were expected to be at year-end 1986.

The above situations and illustrative examples in Exhibits 1 and 2 suggest that the term "reserve strengthening" is sometimes misused depending upon the part of the reserve for which the person is responsible and also depending on the (lack of) technical background of the person using the term. However, these are colloquial uses of the term "reserve strengthening" and do not describe reserve strengthening as that term applies in the context of establishing the aggregate reserve reported on the Annual Statements of PC insurers by qualified loss reserve actuaries.

*An Example Which Illustrates Reserve Strengthening and Some Which Do Not.*

It would be useful at this point in the discussion to explore examples which constitute reserve strengthening and some which do not, in anticipation of constructing a working definition of the term and identifying its chief characteristics.

With respect to reporting loss reserves in the Annual Statement, reserve strengthening refers to a one-time or extraordinary, non-periodic action with respect to changes in reserves based on a recognition of a need for changes in the assumptions and methodologies used to compute the reserves and which results in a material increase to the relative level of adequacy of the total reserve inventory.[8] This is markedly

[8] An increase in the relative level of adequacy of the reserves could also be interpreted as a lessening of the level of inadequacy of the reserves.



different from increases made in estimated ultimate losses for prior accident years, or to the estimates of what these reserves otherwise would have been, due to a gradual reflection of developing claims experience or due to a gradual reflection of changes in the judicial or legislative environment which is not reserve strengthening. The former constitutes reserve strengthening; the latter does not.

Recognition by a PC insurer at year-end 1986 that it had significantly underestimated its IBNR for the long-tail lines of business over several annual valuations requiring it to now make a material change in reserving methods and/or assumptions resulting in a subsequent one-time material change in the level of adequacy of its total reserves (*i.e.*, the reserves for all accident years including 1986) is an example of reserve strengthening.

On the other hand, a PC insurer could make a change to accident year estimates of ultimate incurred losses which are not reserve strengthening. The fact that a change is made to a prior accident year's estimated ultimate losses does not mean that the change constitutes reserve strengthening. An example illustrates this.

Exhibit 3 presents an illustrative example of how a PC insurer can change its estimates of ultimate incurred losses for prior accident years and, hence, change its estimates of reserves from what they otherwise would have been. Here the insurer estimates its ultimate accident year losses by application of the most recent three year average cumulative link ratio to the most recent valuation of case incurred losses. While this is a simplification of the actuarial estimation

process, it is not far from a basic method used by a wide variety of PC insurers.

Exhibit 3 Sheet 1 summarizes the emergence over time of an insurance company's case incurred losses through year-end 1985. The upper portion of Sheet 1 contains a "loss development triangle" for case incurred losses. The right hand portion shows the paid losses for each of the accident years valued as of year-end 1985. The lower portion of Sheet 1 displays the resulting link ratios on a valuation-to-valuation basis and on a cumulative valuation-to-ultimate basis.

Exhibit 3 Sheet 2 contains analogous information updated for the year-end 1986 valuation and also contains loss data for the new accident year 1986. The link ratios calculated from Sheet 2 are based on the same methods and assumptions as in Sheet 1 representing the 1985 year-end valuation.

Exhibit 3 Sheet 3 displays results of a calculation of the estimated ultimate incurred losses and the reserves as of year-end 1985 based on application of the most recent three-year average cumulative link ratios. It also shows a comparison to these same figures valued as of year-end 1986.

While this example is fictitious, it is an illustration of what happens quite frequently in PC insurance companies: the loss development period begins to extend over a longer period than originally measured and anticipated. The difference between Sheet 1 and Sheet 2 is the addition of the 1986 accident year loss data and the development of pre-1986 accident years that took place during calendar year 1986.



The reserve methods used on Exhibit 3 Sheet 2 have not changed from the prior valuation illustrated on Sheet 1. The same three-year average link ratio method is used in 1986 to estimate the ultimate incurred losses for each accident year as was used in 1985, but the data have changed to reflect the experience during calendar year 1986. Yet application of this same methodology results in increased estimated incurred losses, as of year-end 1986, for all pre-1986 accident years with the exception of 1978. The total increase to the estimated incurred losses for pre-1986 years is $2,573 million as shown on Exhibit 3 Sheet 3. The resulting change in the estimated ultimate incurred losses, and hence in the reserves that otherwise would have resulted, does not indicate reserve strengthening as it is known in the PC insurance business.

Another, even simpler example can be constructed to illustrate a phenomenon which is clearly not reserve strengthening. Suppose that a PC insurer considered accident year 1978 to be fully paid and closed as of the year-end 1985 valuation. That is, there are no open case reserves and no provision for IBNR attributable to that accident year as of year-end 1985. During the course of 1986 a new claim emerges for the 1978 accident year and the insurer establishes a case reserve for it. This increase in ultimate incurred losses is not reserve strengthening. The assumptions and methods have not changed; only the loss data have changed. It is also not likely that, if this is the only unanticipated change, that a single change in a case reserve would be so large as to constitute reserve strengthening.

As a final example of a situation which does not constitute reserve strengthening, suppose that, in the course of

rendering a decision about coverage provided under a private passenger auto liability policy, a court decided that if the driver owns two cars than the liability coverage provided is the sum of the coverage of the policies existing on the two cars. This decision is contrary to the manner in which insurance coverage has been interpreted by insurers and by the courts over many years. This example is not fictional. It actually happened and this interpretation of coverage is colloquially referred to as the "stacking of limits."

Since this court decision could potentially apply to many existing outstanding claims still to be settled by insurance companies regardless of the date on which the accident occurred, a PC insurer may need to review its current inventory of open claims and increase certain of them, perhaps significantly, to reflect this new court decision. This increase in the reserves would not constitute reserve strengthening because it does not represent a material change in the reserve setting methods and/or assumptions but, rather, reflects a change in the facts of the situation. The courts have now, by their actions, increased the level at which claims will ultimately be paid, creating an environment which, up until this point, was different from the one understood by insurers when setting case reserves.

Reserve strengthening, on the other hand, refers to an infrequent recognition of the need for increases to reserves to a level higher than what otherwise would have existed had the methodologies and/or assumptions not changed. For example, suppose a PC insurer writes environmental impairment insurance exclusively, began to write it only in 1983, and in 1986, after three years of claims emergence have taken place, realized that the exposure to loss was far



greater than it had anticipated. As a result the PC insurer dramatically increased its reserves from what they otherwise would have been at year-end 1986 as a result of significantly changing its assumptions with respect to both the number of claims and the size of claims expected to arise out of the policies it wrote. This action may constitute reserve strengthening.

Section (3) - Definition of Reserve Strengthening and Identification of Distinguishing Characteristics

*Definition of Reserve Strengthening*

With the examples of what does and does not constitute reserve strengthening and with the NAIC instructions as background, a more comprehensive working definition of reserve strengthening for PC insurers can be developed. With respect to reporting reserves in the Annual Statement, reserve strengthening is said to have occurred if there is a one-time (or, at least, unusual and non-periodic), significant change in the assumptions and/or methodologies used to compute the reserves which results in a material change to the relative level of adequacy of the total reserve inventory.

*Distinguishing Features of Reserve Strengthening*

Distinguishing features of reserve strengthening for a PC insurance company are discussed below. In order for reserve strengthening to occur, all of these characteristics must be present.

*(a) Reserve strengthening is non-periodic*. Usually PC insurers review their emerging claims experience and estimate their reserves at least annually for Annual Statement purposes, with many insurers performing interim valuations quarterly or monthly for internal management purposes. These periodic reviews usually incorporate additional loss data which have emerged since the date of the last valuation and usually result in the normal, anticipated re-estimation of what the loss reserves should be. This periodic re-estimation process stands in stark contrast to an infrequent or one-time revaluation of reserves to a level greater than what they otherwise would have been and which, if coupled with the other characteristics listed in the definition, can constitute reserve strengthening.

*(b) Reserve strengthening involves a material change in methodology and/or assumptions*. As previously discussed, it is fully anticipated that the estimates of reserves will change from valuation to valuation from what they other wise would have been due to the recursive nature of the reserve setting process. For reserve strengthening to occur, the change from one valuation date to the next must involve a material change in methodology and/or assumptions.

In an example cited earlier in this report, an insurer, after three years of loss development, recognizes that its prior assumptions about the number and size of environmental impairment claims were woefully inadequate. If the insurer makes a material change in the number of claims and/or the size of the average claim it ultimately expects to pay, this constitutes a material change in the assumptions underlying the estimation of its loss reserves. If this change in assumptions occurs together with the other characteristics listed in this section, then this action would result in reserve strengthening.



*(c) Reserve strengthening results in a material change in the level of the adequacy of the reserves from what they otherwise would have been.* Changes in an insurance company's accident year estimated ultimate incurred losses are expected to occur over time as part of the recursive process of analyzing developing loss experience and re-estimating the reserves. The resulting changes to what the reserves otherwise would have been, on an all-lines all-accident years combined basis, are usually not significant from one valuation date to the next.

Reserve strengthening, on the other hand, refers to very substantial increases in reserves from what they otherwise would have been--well beyond the normal adjustments, both favorable and adverse, which regular reserve reviews are expected to produce.

*(d) Reserve strengthening is a concept that applies to the total year-end reserves of an insurer*. Reserve strengthening can occur only if the entire year-end reserve adequacy of the insurer has increased. With respect to the reserves set in the Annual Statement of a PC insurer, reserve strengthening is not a term that has meaning in a "part-wise" sense. One cannot say that reserves have been strengthened by considering only some part of the reserves. For example, reserve strengthening has not occurred if there is an increase in the adequacy of case reserves but there is no net increase in the adequacy of the total reserve including the IBNR. Also, reserve strengthening has not occurred if there is an increase in the adequacy of the reserves for some accident

years but there is no net increase in the adequacy of the total reserve for all accident years considered in the aggregate.

Because an element of judgment may be involved in determining whether certain specific situations constitute reserve strengthening or not, there may be disagreement among actuaries about whether or not reserve strengthening has occurred. There would, however, be far less disagreement about the general characteristics of reserve strengthening.

Section (4) - The IRS Definition and Use of the Term *Reserve Strengthening*

*IRS Definition and Examples*

The IRS defines reserve strengthening in its regulations and presents an example, with a series of variations on that example which serve only to illustrate certain specific limitations and exceptional situations. The basic example of reserve strengthening set forth in the regulations is Example (1):

> *Example (1). (i) As of the end of 1985, X, a calendar year taxpayer, had undiscounted unpaid losses of $1,000,000 in the workerscompensation (sic) line of business for the 1984 accident year. The same reserve had undiscounted unpaid losses of $900,000 at the end of 1986. During 1986, X's loss payments for this reserve were $300,000. Accordingly, under paragraph (c)(3)(i) of this*



> *section, X has a reserve strengthening of $200,000 ($900,000 - ($1,000,000 - $300,000)).*
> *(ii) This was X's only reserve strengthening or weakening.*

From this, the IRS concludes that there was $200,000 of reserve strengthening in 1986.

Example (2) is similar to Example (1), serving to illustrate the effect of the limitation on the amount of reserve strengthening:

> *Example (2). The facts are the same as in Example 1, except that X's 1986 loss payments for the reserve were $1,100,000. If only paragraph (c)(3)(i) of this section were applied, X would have a $1,000,000 reserve strengthening ($900,000 - ($1,000,000 - ($1,100,000)). Under paragraph (c)(1) of this section, however, the amount of reserve strengthening for the reserve is limited to the amount of the reserve at the end of 1986.*

Example (3) is similar to Example (1), but instead illustrates reserve weakening. It concludes with the statement that the only effect of reserve weakening is to reduce the amount that is required to be included in income as a result of strengthening of another reserve.

These numeric examples indicate that the IRS considers *any* addition to previously estimated incurred losses to constitute reserve strengthening, allowing for decreases in some reserves to offset increases in others and subject to the limitation that the amount of reserve strengthening cannot

exceed the amount of remaining reserves for a given accident year.[9]

There is nothing in the language of these examples to indicate that the described re-estimation of the reserves is anything out of the ordinary, normal, and very much anticipated re-estimation process that is an integral part of setting reserves for a PC insurer. In fact, a more specific example could be constructed that would fit all of the criteria of the IRS's Example 1 and that would clearly demonstrate that there had been no change to the adequacy of reserves.

Suppose that: (a) taxpayer X of Example 1 writes only workers compensation insurance and it has unpaid claims from various accident years, including the 1984 accident year, as of year end 1985; (b) X's losses from accident years other than 1984 are perfectly reserved so that for each dollar of loss paid, a dollar of loss is removed from the reserves; (c) the 1984 accident year reserves are case reserves only and do not include a provision for IBNR; and (d) $300,000 was paid during 1986 for an accident year 1984 claim as a result of prior mis-estimation of an outstanding claim that had been carried as an undiscounted case reserve at year end 1985 at $100,000 but which was paid in the amount of $300,000 during 1986; and (e) the remaining $900,000 of undiscounted 1984 accident year case reserves at year end 1985 are unchanged during 1986, and, therefore, at the end of 1986 X's total reserves are $900,000.

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[9] For the remainder of the text, this limitation placed on the amount of reserve strengthening by the IRS is assumed without repetition of the phrase.



The situation described above fits the specifics of Example 1, yet there has been no change in the level of the adequacy of reserves (that is, no reserve strengthening). Accident years other than 1984 were perfectly reserved, so there is no reserve strengthening or weakening. In fact, the remaining accident year 1984 case reserves (which, in this example are identical in the aggregate to the total reserves since there is no IBNR) at year end 1986 are each identical to what had been held at the year end 1985, so there has been no change at all to the remaining case reserves for accident year 1984. What happened is that an unpaid claim that had been under-reserved at year end 1985 was paid during 1986 for $200,000 more than its prior estimated cost. According to the IRS, this $200,000 counts as reserve strengthening when, in fact, this is the result of an actual payment with no other changes to the remaining reserves.

*Why the IRS Definition Fails to Describe Reserve Strengthening*

In my opinion, the definition put forth by the IRS fails to constitute reserve strengthening because it does not require the presence of all of the four chief characteristics of reserve strengthening set out in Section (3) above.

First, the IRS definition considers any and all increases in estimated pre-1986 accident year ultimate incurred losses to be reserve strengthening, not just increases arising from a one-time or non-periodic change. Exhibit 3 to this report shows how estimated ultimate incurred losses can change as a result of a routine, periodic and very much anticipated re-examination of loss development. The example presented in

Exhibit 3 does not constitute reserve strengthening, but the IRS would consider it as such.

In fact, the decision in the Western National case (102 T.C. 338 (1994)) states that Section 1.846-3(c), Income Tax Regulations dealing with reserve strengthening, is "invalid to the extent that it defines all additions to reserves as reserve strengthening." Another section of that same decision states, "Had Congress used such plain language as 'all additions' and 'all increases,' we would ... attribute the everyday plain meaning to those words." Clearly, the Tax Court understands the same thing that PC actuaries understand: Not all increases to estimated ultimate incurred losses constitute reserve strengthening.

Second, the IRS definition considers any and all increases in estimated ultimate incurred losses to be reserve strengthening without consideration of the material nature of the change in the assumptions and/or methodologies. If an insurer used a loss development factor of 1.100 to estimate ultimate losses from a 60 month valuation point to ultimate, and the next year used a loss development factor of 1.101 for this same period, the IRS would consider this to constitute reserve strengthening, all other things remaining equal. This action does not constitute reserve strengthening because the change in assumptions is not material.

Referring again to Exhibit 3, the IRS would consider this example to be reserve strengthening, even though the methodology has not changed in 1986 from what it was in 1985. The methodology still relies on the average of the most recent three years of development factors to estimate ultimate incurred losses and, hence, reserves. The loss data



have changed and now reflect the emergence of claims over the 1986 calendar period, but the methodology is unchanged.

Third, the IRS definition considers any and all increases in estimated ultimate incurred losses to be reserve strengthening without considering whether the change results in a material change in the level of reserve adequacy. If the estimated ultimate incurred losses for an insurer were $800 million for accident years 1985 and prior as of year-end 1985 and the estimated ultimate incurred losses for accident year 1985 and prior are now $801 million, the IRS would consider this to be reserve strengthening although the change is not material.

This same example also provides an illustration of why the IRS definition fails to satisfy the fourth requirement of reserve strengthening. According to the IRS definition of reserve strengthening, a part-wise increase in the level of reserve adequacy would constitute reserve strengthening although the overall adequacy of the total reserve inventory at the year-end may not have increased. The term "reserve strengthening" refers to a material increase in the relative level of adequacy in a PC insurer's *total inventory* of aggregate reserves from one valuation date to another.

The IRS definition, on the other hand, (1) uses "reserve strengthening" to refer to increases in the estimated ultimate incurred losses rather than increases in the level of adequacy of the total reserves and (2) applies the term in the narrower context of accident year reserves rather than total year-end reserves. For example with reference to year-end 1985 and 1986, reserve strengthening refers to a comparison of the relative adequacy of the aggregate reserves at year-end 1985 for all accident years 1985 and prior with the adequacy of the

aggregate reserves at year-end 1986 for all accident years *1986* and prior.

The IRS, on the other hand, uses the term reserves strengthening in the sense of comparing year-end 1985 estimated ultimate incurred losses for all accident years 1985 and prior with year-end 1986 estimated ultimate incurred losses for all accident year *1985* and prior, thus omitting any reference to the "new" accident year 1986.

The example set out in Example 1 presents a comprehensive illustration of why the IRS definition fails to conform to all of the characteristics of reserve strengthening set out in section (3). For simplicity, assume that this company's claims are paid and closed for all accident years prior to 1983. In this example, total reserves have been set at year-end 1985 at $800 million for accident years 1985 and prior (column 4). If the ultimate incurred losses turn out to be as stated in column 6 rather than what they were estimated to be in column 5, then the reserve should have been $860 million (column 7) at year-end 1985 rather than the $800 established in column 4.[10] In this case, the adequacy of reserves as a ratio of actual reserves to the reserves that should have been held at that time (required reserves) is 0.930 ($800 million divided by $860 million).

[10] The ultimate incurred losses cannot truly be known until all claims have been closed and paid. For this reason, it is difficult at any valuation date to measure slight changes in the level of reserve adequacy because the whole inventory of year-end reserves must be considered. This imputes even greater importance to the concept of reserve strengthening as a material increase rather than simply any increase in the adequacy of reserves.



At the end of 1986, claims for the accident year 1983 are completely closed and paid. The insurer has changed its estimates of what the reserves for the 1984 and 1985 accident year would otherwise have been and now has set them at a level, for each individual accident year, that is different from what they otherwise would have been at year-end 1986. The 1984 reserves at year-end 1986 are now $10 million, but if the prior assumption about the estimated ultimate incurred losses had remained unchanged, the reserves would have been $30 million. The accident year 1985 reserves at year-end 1986 are now $300 million, but if the prior assumption about the estimated ultimate incurred losses had remained unchanged, the reserves would have been $250 million.

The IRS measure of reserve strengthening compares the changes during calendar year 1986 in estimated ultimate incurred losses and, in so doing, considers the aggregate of all changes to pre-1986 accident years. Hence, the IRS would consider this to be a situation where there is reserve strengthening because the estimated ultimate incurred losses for pre-1986 accident years as of year-end 1986 is now $1,760 million, which is $10 million higher than the year-end 1985 estimate for those same accident years.

If one were to consider the correct definition of reserve strengthening, which is one that considers the relative adequacy of the *total* reserves as of year-end 1986, that would show a decrease rather than an increase to the level of overall reserve adequacy. The ratio of the actual reserves to required reserves for all accident years as of year-end 1986 is 0.835 (column 16) compared to 0.930 as of year-end 1985.

This example does not constitute reserve strengthening according to the definition set out in Section (3) and the characteristics described in points (a) through (d) in that section. First, there is no indication from this example that this is a non-periodic or unusual adjustment. In fact, on the surface, the figures for year-end 1986 look much like the result of normal periodic actuarial review of the reserve estimates.

Second, there is no indication that the changes have arisen from a material change in assumptions or methodologies. The IRS does not consider in its definition whether or not such changes have occurred and mechanically calculates the change in the estimated ultimate incurred losses to determine the presence of what it would describe to be reserve strengthening.

Third, the increase in pre-1986 accident year estimated ultimate incurred losses is minimal. Even if one were to accept the IRS part-wise definition of increases in only the pre-1986 accident year estimated ultimate incurred losses as constituting reserve strengthening, a change of 0.6% ($10 million divided by $1,750 million) simply is not material.

Fourth, there has been a decrease to the level of adequacy of the insurer's reserves, rather than an increase so there certainly cannot be any reserve strengthening. At year-end 1985 the reserves could be considered to be "93.0% adequate." At the end of 1986, and accepting for the moment the IRS part-wise definition as applying only to pre-1986 accident years, there is no reserve strengthening because the reserves are "86.1% adequate," a decrease from "93.0% adequate." Using the correct definition of reserve



strengthening as applying to the entire inventory of reserves, the year-end 1986 reserve adequacy has slipped to 83.5%, an even greater decrease in the degree of reserve adequacy.

*IRS Definition is Mechanical and Applies in Situations Where There is No Reserve Strengthening*

The definition of reserve strengthening used by the IRS is a mechanical arithmetic calculation and in many instances would include situations which do not actually constitute reserve strengthening in the sense that this term is used by PC actuaries with respect to reserves established for Annual Statement purposes.

If an insurer acquired additional information and determined that its initial estimate for total losses for any accident year was too low, and, as a result, increased the unpaid loss reserve for that accident year by an appropriate amount, the IRS would automatically characterize this process as reserve strengthening even though this may not actually be the case.

As a result of the fact that the IRS definition of reserve strengthening does not exhibit the characteristics outlined in the Section (3), application of its definition can lead to a number of nonsensical results. For example, consider an insurer who is chronically under-reserved to the same degree each year. As claims emerge over time, the insurer "catches up" by adding case reserves as the claims become reported, rather than by providing for these cases earlier in the IBNR reserve. This insurer will always be caught in a situation which the IRS considers to be reserve strengthening. The insurer, however, has not changed the methods and assumptions underlying its estimated ultimate incurred losses

and, in fact, has neither changed the general accuracy of this reserve nor improved the degree of adequacy of its reserves.

An extreme example of this phenomenon would be an insurer that estimates zero IBNR and whose total reserves are comprised solely of aggregate case reserves. As each new claim comes in, the insurer establishes a case reserve for it until eventually all claims are reported and paid. As time passes and new accident years are accounted for on the books of the insurer, the reserving practices continue in the same manner. The insurer has done nothing to strengthen reserves. In fact, if the newer accident years have less adequate case reserves than the older accident years, the overall adequacy of the insurer's reserves has declined, but according to the IRS this company would be engaging in reserve strengthening.

In conclusion, the IRS definition of reserve strengthening and the examples in its regulations that are used to demonstrate reserve strengthening in fact fail to describe reserve strengthening as it is understood in the PC insurance business. Primarily it fails because it is a mechanical test



which counts as reserve strengthening any and all increases in estimated ultimate incurred losses for pre-1986 accident years. The IRS definition, in its attempt to delineate the reserve strengthening process, covers too great a territory and captures numerous types of changes which do not constitute reserve strengthening.

/s/ Irene K. Bass

Irene K. Bass
December 9, 1994
1166 Avenue of the Americas
New York, NY 10036-2708

Attached to the report of Irene K. Bass were several tables that have been omitted. They appear in their entirety at page 150 of the parties' joint appendix in the Court of Appeals for the Third Circuit.



IRENE K. BASS, FCAS, FCIA, MAAA

1. Formal Education

Master of Science - 1973 - Northeastern University, Boston, Massachusetts. Major: mathematics

Bachelor of Arts, *magna cum laude* - 1971 - Bowling Green State University, Bowling Green, Ohio. Majors: mathematics and German

2. Professional Designations

Fellow - Casualty Actuarial Society, New York, New York

Fellow - Canadian Institute of Actuaries, Ottawa, Ontario

Member - American Academy of Actuaries, Washington, D.C.

3. Employment History

| | |
|---|---|
| 1990 - Present | Managing Director, William M. Mercer, Incorporated, New York, New York. |
| 1987 - 1990 | Principal, William M. Mercer, Incorporated, New York, New York. |
| 1983 - 1987 | Senior Vice President, Crum & Forster Insurance Group, Basking Ridge, New Jersey. |

| | |
|---|---|
| 1978 - 1983 | Actuarial Director, John Hancock Mutual Life Insurance Company, Boston, Massachusetts. |
| 1973 - 1978 | Assistant Actuary, Commercial Union Assurance Companies, Boston, Massachusetts. |

4. Professional Activities

*Casualty Actuarial Society*

*Offices*

| | |
|---|---|
| President | 1993 - 1994 |
| President-elect | 1992 - 1993 |
| Vice President, Continuing Education | 1989 - 1992 |
| Board of Directors | 1986 - 1989 and 1992 - present (Chair, 1994 - present) |

*Committees*

| | |
|---|---|
| Nominating Committee | 1994 - present |
| Textbook Steering Committee, Chairman | 1985 - 1989 Responsibilities included publication of the first CAS textbook, *Foundations of Casualty Actuarial Science*. |



| | |
|---|---|
| Long Range Planning Committee | 1986 - 1989 and 1992 - 1993 |
| Program Planning Committee | 1983 - 1986 |
| Editorial Committee | 1981 - 1983 |

*American Academy of Actuaries*

| | |
|---|---|
| Board of Directors | 1992 - 1994 |
| Casualty Practice Council | 1992 - 1994 |
| Planning Committee | 1992 - 1993 |
| Nominating Committee | 1992 - 1993 |
| Task Force on Continuing Education Recognition | 1989 - 1991 |

*Casualty Actuaries of Greater New York*

| | |
|---|---|
| President | 1987 |
| President-elect | 1986 |
| Vice President | 1985 |

*Casualty Actuaries of New England*

| | |
|---|---|
| Secretary-Treasurer | 1982 - 1983 |

5. Other Professional Memberships

International Association of Consulting Actuaries
International Actuarial Association (ASTIN and AFIR)

6. Publications

"Surplus Allocation: An Oxymoron?" The Casualty Actuarial Society, Discussion Paper Program, May 1992 (co-author with C.K. Khury).

"The Role of Underwriting and Marketing in Pricing," The Casualty Actuarial Society, *The Forum*, Fall 1988.

"Corporate Planning: An Approach for an Emerging Company," The Casualty Actuarial Society, Discussion Paper Program, May 1985 (co-author with L. Carr).

7. Speeches & Presentations

"Rate of Return and Profitability Issues in California's Proposition 103," Casualty Actuarial Society, Special Interest Seminar on Insurer Profitability, October 1991 and October 1992.

"California Proposition 103 Issues," Casualty Actuarial Society Ratemaking Seminar, 1990.

"The Role of Underwriting and Marketing in Pricing," Casualty Actuarial Society Ratemaking Seminar, 1988 and 1989.



"Personal Lines Classification Plans: Actuarial and Real World Considerations," Casualty Actuarial Society Spring Meeting, May 1987.

"Actuarial Advocacy, an Oxymoron?" Casualty Actuarial Society Annual Meeting, November 1985.

8. Civic Activities

*Student/Sponsor Partnership*, New York, New York

| | |
|---|---|
| Sponsor | 1989 - 1991 |

*Jersey Battered Women's Service, Inc.*, Morristown, New Jersey

| | |
|---|---|
| President | 1987 |
| Vice President | 1986 |
| Board of Directors | 1984 - 1987 |

IN THE UNITED STATES TAX COURT

Docket No. 25767-93

ATLANTIC MUTUAL INSURANCE COMPANY

AND

INCLUDIBLE SUBSIDIARIES,

Petitioners

v.

COMMISSIONER OF INTERNAL REVENUE,

Respondent

EXPERT OPINION REPORT

Prepared by:

W. JAMES Mac GINNITIE, FCAS, FSA, FCA, MAAA
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INDEX

## PURPOSE

The purpose of this report is:

(a) to provide an opinion as to whether the test of reserve strengthening used by the IRS in its Regulations accurately measures "reserve strengthening" as that term is used in the insurance industry; and

(b) to provide an opinion as to whether Atlantic Mutual Insurance Company engaged in "reserve strengthening" with respect to its 1986 loss reserves.

## BIOGRAPHICAL SUMMARY AND QUALIFICATIONS

EDUCATION: Bachelor of Philosophy, major in Mathematics
Northwestern University, 1963

Professional Degrees and Designations:
Fellow, Casualty Actuarial Society, 1963
Fellow, Society of Actuaries, 1967
Fellow, Conference of Consulting Actuaries, 1977
Member, American Academy of Actuaries, 1965
Member, International Actuarial Association, and its ASTIN and AFIR Sections

From 1988 to 1989, I served as President of the American Academy of Actuaries. From 1980 to 1981, I served as President of the Casualty Actuarial Society. I am also a member of the Board of the International Actuarial Association. I have also served as a Board Member and



Vice-President-Education and Examination of the Society of Actuaries. I have served on many committees and task forces of the various actuarial organizations.

## EMPLOYMENT:

I have been employed as an actuary since 1960, when I joined Continental Casualty Company. In 1972 I became a consultant, and have been involved in consulting activities since that time. For two academic years in 1973-1975, I served as Professor of Actuarial Science at the University of Michigan.

As a consultant I have provided actuarial services to a wide variety of clients, including insurance companies, regulatory officials, buyers of insurance, legislators, investors, and trade associations.

Currently I am the National Director of Actuarial Services of Ernst & Young LLP. As such I am responsible for approximately one hundred professionals. Our services are provided to insurance companies, regulators, buyers of insurance, and a variety of self-insurance mechanisms. Prior to joining Ernst & Young LLP, I worked for nearly 20 years at Tillinghast, where I led the casualty actuarial practice.

In 1985 I provided some services to the General Accounting Office in conjunction with their study of the taxation of property-casualty insurance companies. That study was one of the items available to the Congress in the enactment of the Tax Reform Act of 1986.

## SOURCE OF INFORMATION

In conjunction with this case I have reviewed the statutory annual statements filed by Atlantic Mutual Insurance Company for 1985, 1986 and 1993, among others. I have also reviewed the calculations of so-called reserve strengthening by the IRS. I visited the offices of Atlantic Mutual Insurance Company on December 7, 1994, and interviewed personnel involved in the establishment of reserves for losses and loss adjustment expenses, as well as reviewing documents related to the reserves for December 1985 and December 1986. In addition I reviewed actuarial, accounting and financial analysts literature concerned with insurance company reserves.

I have reviewed the report prepared by Irene Bass, dated December, 1994, and am in agreement with it. This report will explain in detail only the essential characteristic of reserve strengthening relating to the level of reserve adequacy. Although the other essential characteristics of reserve strengthening identified in the report prepared by Irene Bass are not discussed or explained in this report, such characteristics also must be satisfied for reserve strengthening to be present.

## CONCLUSION

On the basis of my analysis, discussed below, my conclusions are that:

1. The IRS test does not measure reserve strengthening as that term is understood by actuaries or by



those responsible for setting loss reserves reported on the Annual Statement; and

2. Atlantic Mutual did not strengthen reserves in 1986; rather, its already inadequate reserves became more inadequate.

## ANALYSIS

### *Reserving*

Insurance companies issue policies that promise to pay future claims if specified contingencies occur, within the policy period, such as fire or accidental injury. It may take several years to finally settle a claim. An injured worker, for example, may be entitled to disability payments and medical expenses for many years after the accident which produced his injury. In order to meet its objections under the policy, the insurance company carries a liability on its balance sheet for future payments on claims where the incident giving rise to the claim has already occurred. This liability is commonly referred to as a reserve, or a reserve for losses. There is also a similar liability for the expenses associated with claims, commonly referred to as the reserve for loss adjustment expense (LAE).

Since these reserves are so important to the sound operation of an insurer, they are subject to regulatory review. Indeed, these reserves are one most the most important items in the statement filed each year with the state regulatory authorities who have responsibility for the financial soundness of the insurers licensed in their jurisdiction. Known as the Statutory Annual Statement, this report

contains several schedules which provide extensive information about the reserves held by the company. It also contains substantial information about the adequacy of reserves held in prior years, as evaluated with the benefit of hindsight.

The exact amount of the future payments that an insurer will be called upon to make, on account of incidents that have already taken place, cannot be known with certainty. This is because the amount of payment is dependent on future contingent events. Examples of such events would include:

A. Recovery, death, or continued disability of an insured person;

B. Advances in medical practice that increase (decrease) the cost of treatment for a particular condition;

C. Decision by a potential plaintiff to bring suit;

D. Decision of a judge or jury about negligence and about the amount of damages;

E. Changes in structure and level of fees.

Casualty insurers use a wide variety of methods to estimate the value of their liability for future claim payments. Virtually all commercial insurers, however, base the process, in substantial part, on the estimates that are made on individual claim files by their claim examiners. This is particularly true for larger, longer to settle, and more difficult claims. These estimates by the examiners are based on their



experience with similar claims, which means that they are based on the individual facts and circumstances of the particular claim.

Insurers understand that not all claims will have been reported by any financial statement date. Consequently, they accrue a reserve liability for claims that have been incurred but not reported (IBNR). For some coverages, they also expect that the ultimate cost of settlements may exceed the total of the estimates as of any specific financial statement date. Consequently they may also accrue a reserve liability for adverse development. This can be part of the IBNR reserve (incurred but not enough reported) or can be separate.

*Reserve Strengthening*

Property-casualty loss reserves are often referred to as strong or weak in a manner that is synonymous with adequate or inadequate. This means that they are adequate or inadequate to discharge the obligations of the insurer for claims arising from incidents that have already taken place as of the date of the financial statement. In one sense this adequacy can only be tested in retrospect, after all the claims have been settled (and the prospect of an old claim reopening is sufficiently remote).

But reserves are required for current financial statement; it is not possible to keep the books open until the last claim is closed. Consequently they are estimated using currently available information and techniques. However, the only statement that can definitively be made about a current reserves adequacy is in relation to another value for the *same reserve* at the *same point in time*: the larger reserve

is more adequate, or stronger. To compare the adequacy, or strength, of a current reserve for a line of business to the adequacy, or strength, of a previous reserve for that same line of business required judgment, or estimation, until some future time when the claims covered by both reserves have all been finally settled. Then, and only then, can a definitive statement about the relative adequacy, or strength, of the two reserves be made. Until that time there is always some change that future settlements will affect the retrospectively determined adequacy, or strength, of one of the reserves but not the other. This is because the later reserve covers claims arising from incidents that were not covered by earlier reserve.

An example may help to clarify this. Suppose we wish to compare the adequacy of reserves for the same company and line of business at the end of year 1 and the end of year 2. The reserve at the end of year 1 covers unsettled claims arising from incidents occurring in year 1. The reserves at the end of year 2 cover both unsettled claims arising from incidents occurring in year 2 *and* any remaining claims from year 1 that are still unsettled at the end of year 2. Settlements of year 1 claims which occur after the end of year 2 will affect the retrospective determination of adequacy of both the year 1 reserve and the year 2 reserve. But settlements after year 2 of year 2 claims will affect the retrospective determination of adequacy of only the year 2 reserve. So if, in year 4, a claim for year 1 is settled for ten times its previously estimated and reserved amount, then both the reserve at the end of year 1 and the reserve at the year of year 2 will look, in retrospect, to have been more inadequate (or less adequate) than they did before the settlement. If however, the ten times settlement were for a



year 2 claim, then only the retrospective evaluation of the adequacy of the reserve at the end of year 2 will be impacted.

There is an exception to this observation about the difficulty of comparing adequacy of reserves at separate points in time. If the reserves at the two points in time cover the same set of claims, then a comparison of relative adequacy, or strength, can be made. So if, in the preceding example, the reserve at the end of year 2 covers only claims arising from incidents in year 1, then the comparison can be made. Since payments and settlements have been made in the interim, however, the comparison becomes not only one of reserve strength, or adequacy, but one of incurred losses.

Again, and example may help. If claims from year 1 generate payments of $500 in year 1, $1,000 in year 2, and $800 in year 3 (and there are no further payments) and if the reserve at the end of year 1 for these claims is $1,500, and at the end of year 2 is $1,000, then the reserve at the end of year 1 was inadequate, or weak, because it did not cover the $1,800 of future payments ($1,000 in year 2 and $800 in year 3). The reserve at the end of year 2, however, was adequate (even redundant) or strong, because it exceeded the $800 amount subsequently paid. Thus we can observe, in retrospect, that the reserve at the end of year 2 was more adequate, or stronger, than the reserve at the end of year 1. It is also possible to make this observation at the end of year 2, before the payments in year 3. How? It cannot be observed by comparing the two reserves, because the $1,000 at the end of year 2 is less than the $1,500 at the end of year 1. But it can be observed by comparing the amount of incurred losses for year 1, measured at the end of year 1, of $2,000 ($500 paid and $1,500 reserved) with the amount of incurred

losses, measured at the end of year 2, of $2,500 ($500 + $1,000 paid, and $1,000 reserved). Since the $2,500 (is greater than the $2,000, it is stronger, and the estimate of incurred losses can be said to have been strengthened by $500.

But note that we have excluded from this example the claims arising from incidents occurring in year 2. This was necessary in order to make any observation about the relative adequacy, or strength, of the two reserve amounts at different points in time. If the year 2 claims had been identical to the year 1 claims, but if the reserve for year 2 claims at the end of year 2 had been only $500, the total reserve at the end of year 2 would have been less adequate than was the total reserve at the end of year 1. This is because the $500 of strengthening in respect of year 1 claims was more than offset by the weakening in respect of year 2 claims. (The reserve for year 2 claims at the end of year 2 is inadequate by $1,300, representing $1,000 + $800 of future payments less the $500 reserve.)

Thus in order to compare the adequacy, or strength, of reserves for a line of business at two points in time, it is necessary to have an estimate of the ultimate settlement value of the claims covered by the later reserves that are not covered by the earlier reserve; these are the claims arising from incidents that occurred between the two dates. While many claims remain open, there will necessarily be some uncertainty in the estimate of adequacy, or strength. The passage of time, and the settlement of claims, will reduce that uncertainty and improve the quality of the estimate, so long as new claims are not being added.



The IRS test of strengthening, as prescribed by Regs. sec. 1.846-3(c)(3), concentrates on developments during 1986 of the amount of losses incurred during 1985 and prior. As such, it can only make a meaningful statement about the change in adequacy of the reserve for 1985 and prior claims. It does not make any estimate of the adequacy or inadequacy, strength or weakness, of the reserve at the end of 1986 in respect of claims arising from incidents in 1986. As such, it makes an incomplete comparison, and since it makes no statement about a major portion of the reserve at the end of 1986, it makes no meaningful statement about the adequacy, or strength, of the reserve at the end of 1986.

The IRS test of strengthening, as prescribed by Regs. sec. 1.846-3(c)(2), does make a weak and inadequate attempt to evaluate the adequacy of the reserves for 1986 accidents, as of the end of the year. It does this by comparing the reserve actually established for 1986 to a hypothetical reserve, using the same assumptions that were used to determine the 1985 accident year reserves. (The regulation does not specify the reserve date from which these assumptions are to be extracted.) In Atlantic Mutual's case, there was every reason to expect that these "same assumptions" would produce inadequate reserves, because they had produced inadequate reserves in previous years. Yet the IRS test, as actually applied, implicitly assumed that this portion of the reserve was exactly adequate. In fact, it has proven to be inadequate, and there was no reason at the time to believe that it was adequate since it was developed using consistent methods and assumptions to those used in prior years, which methods and assumptions had historically produced inadequate reserves.

*1986 Versus 1985 and Prior*

The IRS test artificially divides the 12/86 reserves into two groupings: 1986 Accident Year (AY) reserves, and 1985 and Prior AY reserves. It thereby ignores the possibility that any increase in the adequacy of the 1985 and Prior AY reserves may be offset by an inadequacy in the 1986 AY reserves. This possibility actually occurs quite frequently in the insurance business. It is particularly common where a company calculates its IBNR, as does Atlantic Mutual, by an historical review of the number and average cost of previously unreported losses, rather than by projecting ultimate incurred losses then subtracting reported losses to calculate the IBNR.

Our analysis indicates that whatever increase in adequacy (decrease in inadequacy), of ultimate incurred losses was accomplished by Atlantic Mutual in 1986 with respect to 1985 and Prior accident years, was more than offset by a greater inadequacy in the 1986 accident year reserves established at the end of 1986.

*Answer Depends on Data Arrangement*

The answer found by the IRS test is a function of the arrangement of the data. The test uses data by line and by accident year, and tests for change in projected ultimate value for each cell. However, accident years 1976 and earlier are grouped together. Losses and loss adjustment expense are also grouped together. While both groupings are consistent with some of the supporting schedules in the Statutory Annual Statement, both are also arbitrary. It would be easy to extend the analysis by year to the earliest year with



an open claim (1952 in Atlantic Mutual's case). It would be easy to test losses and loss adjustment expense separately. Other data arrangements, such as by state, are also possible.

If a different data arrangement were utilized, the amount of reserve strengthening detected by the IRS test would be different. This is because of the arbitrary "inside limits" in the test, where payments greater than the opening reserves are ignored, and where "strengthening" is limited to the ending reserve. In general, the finer the data arrangement and the greater the number of cells, the smaller the amount of "reserve strengthening" that will be calculated by the IRS mechanical test. (See also Example 1, below.)

I have constructed several EXAMPLES to illustrate some of the defects of the IRS test:

Example 1 shows that the amount of reserve "strengthening" depends on whether claims are reviewed separately or in a group; the more finely the data are arranged, the smaller the amount of "strengthening."

Example 2 shows that the "strengthening" detected by the IRS test is arbitrary because it depends on when a claim is settled.

Example 3 shows that external events, beyond the insurer's control, can produce "strengthening" under the IRS test.

Example 4 shows an anomaly in the IRS test that consistently under reserved insurers will always manifest "strengthening" while consistently over reserved insurers

will not and could actually be increasing reserve adequacy without detection).

Example 5 illustrates how reserve "strengthening" can be found by the IRS test when there has been no change in practice, and a probable weakening has occurred.

All of these examples help to illustrate that, whatever the IRS test is measuring, it is not reserve strengthening.

CONCLUSION 1

As a result of my analysis described above, I conclude that:

(a) the IRS test prescribed by Regs. sec. 1.846-3(c)(3) does not even attempt to measure reserve strengthening, principally because it ignores the 1986 accident year, and the test of the adequacy of the 1986 accident year prescribed by Regs. sec. 1.846-3(c)(2) uses a faulty test which presumes adequacy even in the face of historic evidence to the contrary;

(b) while it purports to measure the change in the projection of ultimate incurred losses for accident years 1985 and prior that occurred during 1986, it fails to do so accurately, principally because it imposes artificial and arbitrary limits on payments in excess of opening reserves and on strengthening in excess of ending reserves; and

(c) the amount of so-called reserve strengthening detected by the IRS test will vary, perhaps significantly, depending on the arbitrary data arrangements used in the analysis, because of the limits in (b) above.



*Atlantic Mutual*

Atlantic Mutual is a multi-line insurance company, writing primarily workers' compensation and commercial multi-peril insurance. Atlantic Mutual has been run by a stable management team in the same way for many years. It has also set its reserves in a consistent manner for many years. In particular, it established its reserves as of year-end 1985 and 1986 in a consistent manner.

*Case Reserves*

The majority of Atlantic Mutual reserves for unpaid losses in 1985 and 1986 were case reserves. These case reserves are set on a case by case basis, based on the individual facts and circumstances of each claim. The amount of these individual case reserves was $255.7 million at 12/85 and $277.7 million at 12/86.

*IBNR Reserves*

In addition to these case reserves, Atlantic Mutual established a bulk reserve to cover claims that had been incurred but had not yet been reported (IBNR). This IBNR was $93.7 million at 12/85 and $111.7 million at 12/86. As such, it was approximately 29% of the total reserve held for unpaid losses.

Atlantic Mutual did increase its IBNR reserves in 1986, from $93.7 million to $111.7 million. This was done

in response to significant premium growth, as shown in the following table:

*1985*

| *Line* | *Net Premium Earned ($000's)* | *12/31 ($000's)* | *IBNR %* |
|---|---|---|---|
| Auto Liability | 65,571 | 16,720 | 25.5 |
| General Liability | 8,457 | 15,945 | 188.5 |
| Workers' Comp | 37,261 | 10,339 | 27.7 |
| Multiple Peril, etc. | 139,569 | 43,622 | 31.3 |
| Other Lines | 58,347 | 7,087 | 12.1 |
| Total All Lines | 309,205 | 93,713 | 30.3 |

*1986*

| *Line* | *Net Premium Earned ($000's)* | *12/31 ($000's)* | *IBNR %* |
|---|---|---|---|
| Auto Liability | 84,243 | 21,052 | 25.0 |
| General Liability | 13,659 | 14,636 | 107.2 |
| Workers' Comp | 49,642 | 14,362 | 28.9 |
| Multiple Peril, etc. | 187,675 | 52,740 | 28.1 |
| Other Lines | 73,081 | 8,918 | 12.2 |
| Total All Lines | 408,300 | 111,708 | 27.4 |



Atlantic Mutual developed its IBNR reserves by projecting the number of unreported claims for each line of business, and then estimating the average amount of these claims. The total IBNR reserves that were indicated for each line of business were further evaluated by quarterly actuarial reviews of the previous year's reserves, based on which senior management would judgmentally increase or decrease the amount of IBNR actually held. In some cases, the adjustment amounts were intended to correct perceived underestimates or overestimates of case reserves in a particular line of business. This methodology and practice was consistent with what was done to establish Atlantic Mutual's IBNR reserves for each of the 1984 and 1985 years.

The above table shows that the growth of IBNR reserves, while substantial, failed to keep pace with premium growth. Retrospectively, we know that Atlantic Mutual actually lost reserve adequacy in 1986, in spite of the substantial increase in the absolute amount of the IBNR reserves.

*LAE Reserves*

In 1985 and 1986 Atlantic Mutual determined its loss expense reserves partly by individual case estimate, partly by formula, and partly by judgmental factors.

Individual case estimates were established for anticipated legal expenses associated with known claims that were in litigation as of December 31, 1985 and 1986.

Formula ALAE reserves were established via the application of historically determined ALAE to loss ratios to currently held loss case reserves and loss IBNR. Judgmental additions to the overall formula ALAE reserves were made on the basis of additional quarterly analyses that developed ratios of ultimate paid ALAE to ultimate paid loss, which were then applied to projected ultimate losses. Formula ULAE reserves were established via the application of a historically determined paid expense to loss ratio applied to case and IBNR reserves.

Atlantic Mutual also increased its LAE reserves in 1986, from $72.3 to $84.1 million. They did this in response to significant premium growth, and to indications that past LAE reserves had not been adequate, as shown in the following table:

*1985*

| *Line* | *Net Premium Earned (000's)* | *12/31 (000's)* | *LAE %* |
|---|---|---|---|
| Auto Liability | 65,571 | 8,593 | 13.1 |
| General Liability | 8,457 | 13,636 | 161.2 |
| Workers' Comp | 37,261 | 6,137 | 16.5 |
| Multiple Peril, etc. | 139,569 | 43,044 | 30.8 |
| Other Lines | 58,347 | 907 | 1.6 |
| Total All Lines | 309,205 | 72,317 | 23.4 |



*1986*

| *Line* | *Net Premium Earned (000's)* | *12/31 (000's)* | *LAE %* |
|---|---|---|---|
| Auto Liability | 84,243 | 9,544 | 11.3 |
| General Liability | 13,659 | 13,066 | 95.7 |
| Workers' Comp | 49,642 | 6,885 | 13.9 |
| Multiple Peril, etc. | 187,675 | 53,397 | 28.5 |
| Other Lines | 73,081 | 1,175 | 1.6 |
| Total All Lines | 408,300 | 84,067 | 20.6 |

The above table shows that the growth of LAE reserves, while substantial, failed to keep pace with premium growth. Retrospectively, we know that Atlantic Mutual actually lost reserve adequacy in 1986, in spite of the substantial increase in the absolute amount of the LAE reserves.

While Atlantic Mutual officers believe they used consistent methods to calculate their 1986 AY reserve, there is objective evidence that they failed to keep pace with the growth in business. As a result, the weakness of the reserve held on 12/86 for the 1986 accident year more than offset any increase in the strength of the reserves held for the 1985 and prior accident years. By ignoring the weakness of the 1986 accident year reserves, and concentrating on only the 1985 and prior accident year portion of the reserves, the IRS has found "strengthening" when in fact the reserves were less adequate.

At the end of 1985, Atlantic Mutual had a total reserve for loss and loss adjustment expense of $421.7 million. In the ensuing eight years, it has paid $449.7 million on claims from 1985 and prior accident years. As of December 1993 it has reserves for additional payments, of $56.5 million, as follows:

| | |
|---|---|
| Reserve for losses on known cases | $38.7 million |
| Reserve for IBNR losses | 8.1 million |
| Reserve for ALAE on known cases | 3.8 million |
| Reserve for IBNR ALAE | 3.6 million |
| Reserve for ULAE | 2.4 million |

It is reasonable to assume that the $56.5 million is accurate and that future development will be small. With that assumption, the indicated deficiency in the December 1985 reserve is $84.6 million.

At the end of 1986, Atlantic Mutual had a total reserve for loss and loss adjustment expense of $473.5 million. In the ensuing seven years, it has paid $491.1 million on claims from 1986 and prior accident years. As of December 1993 it has reserves for additional payments, of $71.2 million, as follows:

| | |
|---|---|
| Reserve for losses on known cases | $47.0 million |
| Reserve for IBNR losses | 11.2 million |
| Reserve for ALAE on known cases | 4.2 million |
| Reserve for IBNR ALAE | 5.8 million |
| Reserve for outstanding ULAE | 3.0 million |



Assuming the $71.2 million for future payments is accurate, the indicated deficiency in the December 1986 reserves is $88.8 million.

The deficiency in Atlantic Mutual's reserves then, grew by $4.2 million, from $84.6 million to $88.8 million during 1986.

(Because of the uncertainty surrounding liabilities for environmental impairment, there is some chance that future payments will exceed current reserves on very old accident years, i.e., prior to 1985. This would increase the inadequacy of both the December, 1985 and the December, 1986 reserves, by identical amounts. The conclusion that Atlantic Mutual's inadequacy grew during 1986 would remain unchanged.)

CONCLUSION 2

As a result of my analysis described above, I conclude that Atlantic Mutual did not strengthen reserves during 1986 by $6,532,000, or a discounted amount of $1,339,000, as stated by the IRS. Atlantic Mutual did nothing to artificially increase the adequacy of its reserves in 1986. The reserves were inadequate at the end of both 1985 and 1986. Because of a substantial growth in business, the inadequacy of Atlantic Mutual's reserves actually increased in 1986; i.e., they were "weakened," not strengthened, by $4.2 million.

Example 1. Accident Year 1985 has only two claims open at the beginning of 1986, each with a reserve of $50,000. During 1986, the first claim is settled for $75,000 leaving a reserve of $0 at the end of 1996. There is no activity on Claim 2 during 1986; the reserve remains at $50,000. According to the IRS definition of reserve strengthening, there has been no reserve strengthening on either of these claims when examined separately; however, when looked at in total there has been a reserve strengthening of $25,000. (The reason there is no strengthening on the first claim is because strengthening cannot exceed the ending reserve.)

Accident Year 1985

| | *1985 Reserve* | *1986 Paid* | *1986 Reserve* | *IRS Reserve Strengthening* |
|---|---|---|---|---|
| Claim 1 | $ 50,000 | $75,000 | $ 0 | $ 0 |
| Claim 2 | 50,000 | 0 | 50,000 | 0 |
| Total | 100,000 | 75,000 | 50,000 | 0 |
| Claims 1 & 2 | 100,000 | 75,000 | 50,000 | 25,000 |



Example 2. This example illustrates how two identical claims show different reserve strengthening amounts depending on when the claim is settled. The claims each had initial reserves of $1,000,000. Claim 1 was settled during 1986 for $2,000,000. Because these claims were from identical occurrences, the company expects to settle the second claim for $2,000,000 as well. However, only $500,000 has been paid by the end of 12/31/86. The remaining $1,500,000 reserve is treated as reserve strengthening. (Note also that the amount of reserve strengthening calculated by the IRS depends on the amount paid in 1986. If the Case 2 claim had paid $1,000,000 during 1986 and had a remaining reserve of $1,000,000, then the reserve strengthening would be $1,000,000 (limited by the amount of the final reserve). If it had paid $1,500,000 and had a remaining reserve of $500,000, then the reserve strengthening would be $500,000.) The IRS calculation of reserve strengthening is a confused mixture of two concepts: One is that reserve strengthening is a function of the estimated ultimate amount of losses incurred for a given line and accident year, whether paid or reserved, and the other is that reserve strengthening is a function of the ending reserve.

Accident Year 1985

| | Reserve 12/31/85 | Payment during 1986 | Reserve 12/31/86 | Reserve Strengthening during 1986 |
|---|---|---|---|---|
| Case 1 | $1,000,000 | $2,000,000 | $ 0 | $ 0 |
| Case 2 | $1,000,000 | $ 500,000 | $1,500,000 | $1,500,000 |

Example 3. Consider the case of a reinsurer that became insolvent in 1986. The primary company had ceded reserves of $10,000,000 to the reinsurer as of 12/31/85. During 1986, the reinsurer became insolvent, leaving the primary company to involuntarily accept the burden and to add this additional amount to its current reserves. We have assumed that no payments were made during 1986 for ease of explanation. The IRS definition would produce reserve strengthening of $10,000,000, penalizing the primary company for an event completely out of its control!

All Accident Years
Reinsurer becomes insolvent during 1986

| | |
|---|---|
| (1) Direct + Assumed Reserves @ 12/31/85 | $75,000,000 |
| (2) Ceded Reserves @ 12/31/85 | 10,000,000 |
| (3) Net Reserves @ 12/31/85 [(1) - (2)] | $65,000,000 |
| (4) Payments in 1986 on Direct + Assumed Reserves | $ 0 |
| (5) Payments in 1986 on Ceded Reserves | 0 |
| (6) Direct + Assumed Reserves @ 12/31/86 | $75,000,000 |
| (7) Ceded Reserves @ 12/31/86 | 0 |
| (8) Net Reserves @12/31/86 [(6) - (7)] | $75,000,000 |
| (9) Reserve Strengthening as per IRS Definition | $10,000,000 |



Example 4. Companies A and B are identical except for their reserving. Both have exposures that result in two claims each year, for $500 each. One of the claims is settled in the year after the loss, and the other in the second year after the loss. Company A (over) reserves all claims for $1,000, while Company B (under) reserves all claims for $250. The IRS test for 1985 and prior years will find reserve strengthening in Company B but not in Company A. In fact, neither company has strengthened or weakened reserves.

| | *AY* | *Company A* | *Company B* |
|---|---|---|---|
| 12/85 Reserve | 84 | $1,000 | $ 250 |
| | 85 | 2,000 | 500 |
| 1986 Payments | 84 | 500 | 500 |
| | 85 | 500 | 500 |
| 12/86 Reserve | 85 | 1,000 | 250 |
| | 86 | 2,000 | 500 |
| IRS Test | Paid | 1,000 | 1,000 |
| | Reserve Change | (2,000) | (500) |
| | Strengthening | (1,000) | 250 |

The strengthening detected by the IRS test is only $250 for Company B, because the amount of strengthening is limited to the ending reserve for each accident year. The actual amount by which the ultimate incurred for accident years 1985 and prior has been increased, or strengthened, is $500.

The IRS will assume the 1986 reserve is exactly adequate, when in fact Company A is overreserved and Company B is underreserved.



REPORT

ON "RESERVE STRENGTHENING"

ATLANTIC MUTUAL INSURANCE COMPANY

MUTUAL INSURANCE COMPANY AND INCLUDIBLE

SUBSIDIARIES

v.

COMMISSIONER OF INTERNAL REVENUE,

TAX COURT NO. 25767-93

Prepared by:
Raymond S. Nichols, F.C.A.S., M.A.A.A.
December 14, 1994

RESPONDENT'S EXHIBIT AE
DOCKET NO. 25767-93

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*EXECUTIVE SUMMARY*

The purpose of this report is to opine on the meaning of "reserve strengthening" as this term is used in the property casualty ("p/c") industry and as I would apply it this term to Atlantic Mutual. In the property-casualty industry the term "reserve strengthening" has various meanings, rather than a single universal meaning. However, in determining a property-casualty insurer's underwriting income, "reserve strengthening" generally refers to a positive amount resulting from the difference between calendar year incurred losses and accident year incurred losses.

"Reserve strengthening" may refer simply to net additions to prior year aggregate reserves. This definition will be referred to as the "management definition" throughout this report. Even with this less technical definition, however, "reserve strengthening" usually refers to an impact on underwriting income. The first definition of "reserve strengthening", given in the paragraph above, includes the less technical management definition of net additions to prior year end aggregate reserves.

"Reserve strengthening" may mean increased reserves on individual claim files for known but not settled claims. This third definition is common within claim departments or among managers discussing claim department operations. Actuaries and accountants know that such increases must be offset by complementary decreases in actuarial reserves before these increases can have financial impact. This third definition will be called the "adjusters' definition" for purposes of this report. The first definition



includes the situation where individual claims reserves are increased, but not offset by decreases in actuarial reserves.

A fourth definition of "reserves strengthening" may be that of positive additions to prior year aggregate reserves when these additions result from a change in the assumptions and methods used to quantify reserves. This is a restrictive definition and would apply only in limited situations. Throughout the rest of this report this fourth definition will be referred to as the "restrictive definition."

Casualty actuaries study a common body of professional literature. Because of their common body of knowledge, they are familiar with the definition of "reserve strengthening" given by the formula:

Year Ending Reserves for Prior Accident Years -
Year Beginning Reserves +
Losses Paid During the Calendar Year for Prior
Accident Years =
Reserve strengthening (weakening).

For example, suppose at December 31, 1994 an insurer's aggregate reserve for claims occurring on or before December 31, 1993 is \$500,000. Further, suppose the reserve for the same claims was \$1,000,000 at December 31, 1993 with \$700,000 paid on these claims during the intervening year. Then "reserve strengthening" during 1994 is \$200,000 (\$200,000 = \$500,000 - \$1,000,000 + \$700,000.)

Underwriting income in the property-casualty industry changes cyclically. With underwriting cycles, "reserve strengthening" is often systematic and industry

wide. Any definition of "reserve strengthening" that restricts the words to the idiosyncrasies of individual company reserve assumptions and methods will miss the impact of reserve strengthening during underwriting cycles. For this reason alone, the common definition of "reserve strengthening" does not restrict the meaning to changes in reserve assumptions and methods.

There is another reason the restrictive definition of "reserve strengthening" does not encompass the common actuarial use of the words. In practice, good reserving procedures normally entail using more than one set of assumptions and methods. Using "reserve strengthening" as defined by this report always provides an objectively measurable value. With multiple methods and assumptions, the impact of a change in assumptions and methods may not be measurable.

Finally, this report distinguishes the terms "reserve strengthening" and "reserve adequacy." Reserves adequacy affects the measurement of the financial position of an insurer at a point in time. Reserve strengthening affect the matching of revenue and expenses of an insurer during an accounting cycle. The concepts are related but distinguishable. With this distinction, the IRS regulation, Reg. 1.846-3(c)(3), becomes clearer and becomes a measurement of "reserve strengthening." It becomes synonymous with "reserve strengthening" as used in the p/c insurance industry to analyze underwriting income.



*BACKGROUND*

The term "reserve strengthening" has several meanings in the p/c insurance industry. This is because "loss reserving," or estimating loss and loss expense liabilities, is a central actuarial process that affects three major financial tasks within the industry. P/C actuaries, working on the tasks of ratemaking, reserving, and product pricing are all concerned with estimating loss and loss expense liabilities. At times the differences in these tasks promote differences in how professionals use terms related to loss reserving. Even so, the term "reserve strengthening" is most often used to describe the effect of reserve changes on underwriting income.

In the property-casualty insurance industry, "loss reserving" is the name of the process for estimating liabilities for loss and loss adjustment expenses. Loss reserving is the most difficult part of three critical evaluations: determining the financial position of an insurer, determining the cost of insurance products, and determining the net income of an insurer. Other parts of these evaluations rely on accounting records of transactions that have taken place. In loss reserving, p/c actuaries forecast the financial impacts of events that will take place in the future.

The accuracy of the estimates of loss and loss adjustment expense liabilities has a fundamental impact on the financial strength and stability of an insurance carrier. This impact goes to the heart of what an insurer sells to its customers, the promise to settle claims. In order to make its promises to settle claims, an insurer must estimate the dollar costs that it will incur in fulfilling these promises.

Estimating costs breaks down into two separate, but related tasks. The first task is estimating the premiums needed to fund future promises. P/C actuaries call this task "ratemaking." The second task is estimating the liabilities for promises already made and not yet satisfied. P/C actuaries call this second task "loss reserving." The estimates of loss and loss adjustment expense liabilities are known as the "loss reserves."

Loss and loss adjustment expense liabilities are the largest liabilities of an insurer. The size of these liabilities gives loss reserving its relative importance. Like many forecasting problems, estimating loss and loss expense liabilities is not an exact science. A small percentage error in the estimation can have a large impact on the actions and options of an insurance organization.

The need for accurate estimates is clear in three areas. First, the insurer sells a promise that it will pay for losses and loss adjustment expense. It can keep this promise only if it is now (and continues to be) financially sound. An insurer must have accurate estimates of its loss and loss adjustment liabilities because, without accurate estimates, the balance sheet will not represent a fair statement of financial position.

A second reason accurate estimates are needed is to price insurance products adequately. Insurance depends on the law of large numbers. The loss of an individual policyholder is not predictable, but the losses from a group of policyholders may be predictable within acceptable ranges. The insurer depends on the results from past groups of policyholders to predict the future results. These results include losses paid and loss liabilities outstanding. Without



accurate estimates of the outstanding liabilities, an insurer's predictions of future results may be flawed.

A third reason estimating liabilities is important is that an insurer needs accurate estimates to monitor its underwriting income and its return on equity. A group of policyholders may have predictable losses within reasonable ranges, but these losses cannot be known exactly. To provide for the uncertainty of the group's losses, an insurer must have a net worth large enough to absorb these fluctuating results. As in any business, the owners of the capital must be able to monitor and match the expense of doing business with the revenues earned. They can only measure the cost of doing business if their loss reserves are accurately estimated and assigned to the proper time period.

It is hard to achieve accurate, stable estimates of loss liabilities because of the structure of these liabilities. An insurance carrier incurs a liability as soon as an insured incident occurs. However, it takes time to discover, report, and settle claims. The need to establish loss and loss adjustment liabilities and the complex structure of these liabilities arises because it takes time and effort to adjust claims.

*DISCUSSION AND ANALYSIS*

Terms related to loss reserving, such as "reserve strengthening," are used in determining an insurer's financial position, determining the cost of the insurance products, and determining the net income earned in providing these products. P/C actuaries (more commonly known as "casualty actuaries") are the key professionals concerned in all of these

areas of loss reserving. Their use of "reserve strengthening" would determine the meaning of these words for other insurance professionals. For p/c actuaries, "reserve strengthening" usually denotes the impact of reserve changes on underwriting income. Because of their training, all p/c actuaries would understand this impact and would understand the use of "reserve strengthening" in this context.

### *A P/C ACTUARY'S PROFESSIONAL DEVELOPMENT*

The p/c insurance industry developed key professionals, known as p/c actuaries, to serve its particular technical needs. A p/c actuary may design, price and market new products; may establishing reserves for future claims; and may monitor and measure financial results. Broad education and training in all aspects of the p/c insurance business are needed to handle these responsibilities. The necessary knowledge is acquired both through on-the-job training and through extensive individual study.

It takes between four and eight years to attain full professional qualifications as a p/c actuary. Most candidates get their initial training in large insurance companies, consulting firms or insurance rating bureaus. During their training period, candidates will often rotate from one area of responsibility to another, becoming familiar with all phases of actuarial work. Besides their practical work experience, candidates study for the 10 examinations that they must pass to become a Fellows of the Casualty Actuarial Society, or "FCAS."



### *A P-C ACTUARY'S TRAINING IN LOSS RESERVING*

A candidate's understanding of the words "loss reserving" and "reserve strengthening" will be a combination of the candidate's experience with his employer and the use of words in study material from the Casualty Actuarial Society ("CAS"). In different locales and at different times, the words "reserve strengthening" will be discussed in terms of product pricing, financial position, or underwriting income. Also, the history and culture of an individual company may give the words "reserve strengthening" a meaning not common to other companies. Even so, all accredited p/c actuaries study a common body of material and would understand professional literature that discussed this topic.

Among casualty actuaries, their common core of professional knowledge is centered on the CAS's "Syllabus of Examination." The Casualty Actuarial Society conducts an educational and examination program for prospective members in order to develop qualified professionals in the field of casualty actuarial practice. The examination parts in ratemaking indirectly include material on estimating loss liabilities, however, Part Seven is the primary examination on loss reserving. Part Seven outlines the material an actuarial student must know concerning premiums accounting, loss and expense reserves, expense analysis, financial reporting and published financial information. The examination process is rigorous. Every Fellow of the Casualty Actuarial Society has completed this examination process and is familiar with the material on the Syllabus.

Every successful Part Seven candidate is familiar with the examination articles that explain the impact of changes in reserve on net underwriting income. For example, the article "Effect of Loss Reserve Margins in Calendar Year Results" by Rafal J. Balcarek, published in the Proceeding of the Casualty Actuarial Society ("PCAS"), has been on the Syllabus for at least the period 1977 to 1994. In that article, Mr. Balcarek says:

> The amount of benefit or penalty to the calendar year results due to loss reserve margins will be determined by two things:
>
> (1) Adequacy of reserves on losses incurred during the current year.
>
> (2) Development of prior years' losses during the current year.[1]

Later in the article:

> A question remains whether insurance companies use their reserve margins to stabilize their results. The writer realizes that many people regard with horror the idea that one should adjust reserve margins according to the size of the loss ratio. Yet emotions are a poor basis for making sound business judgments. Looking at the matter from a logical point of view, there does not seem to be anything

[1] Balcarek, Rafal J., "Effect of Loss Reserve Margins in Calendar Year Results," *Proceedings of the Casualty Actuarial Society,* Volume LIII (1966), page 2.



> objectionable in increasing reserve safety margins during years of good underwriting results. Conversely, there should be no objections to reduction of these margins in time of poor experience in order to soften its impact, as long as the loss reserves are fully adequate and the company has a sufficient amount of surplus for the type and amount of business it conducts.[2]

Mr. Balcarek concludes his article by saying:

> The main conclusion is that loss reserve margins for the major casualty lines are basically unstable and exert an appreciable influence on calendar year results. In the comparison of the experience of an individual company for one year with that of prior years, or with the experience of other companies, the changes in reserve margins may, on occasion, be the most important single factor responsible for the observed differences.
>
> There is evidence that in the case of an individual company loss reserve margins . . . have a tendency to move in the same direction at the same time. In addition there is also evidence that the companies tend to go together in raising or lowering their loss reserve margins.
>
> The companies do not appear to enjoy a great measure of success in controlling their loss reserve

[2] *Id* at 8.

margins to their best advantage. This is one of the most pressing problems because in times of poor underwriting experience companies cannot afford erratic changes in loss reserve margins to contribute to their adverse results and thus compound their difficulties.[3]

The study material on Part Seven of the Syllabus presents methods and techniques of loss reserving and presents principles of p/c company accounting. Some material, such as the article by Mr. Balcarek, spans both subjects and explains the impact of reserve changes on underwriting income. Every p/c actuarial candidate must understand the impact of reserve strengthening on underwriting income if he or she expect to pass this examination.

*THE IMPACT OF CHANGES IN LOSS RESERVES ON UNDERWRITING INCOME*

"Reserve strengthening" is used in the p/c insurance industry to explain the impact of reserve changes on underwriting income. In any industry, income is measured as the difference between revenues and expenses realized during an accounting period. The proper matching of revenues and expenses is the most difficult part of income measurement for any business. In the p/c insurance business this matching problem involves the proper matching of "earned premiums" and "incurred losses." "Reserve strengthening" is at the heart of this matching problem.

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[3] *Id* at 9.



The sources of revenue and expenses that determine income for a p/c insurer are "earned premiums," "incurred loss and loss expenses," "other expenses," "investment income," and "other income." "Earned premiums" are the revenues earned on policies in force during a calendar year. Insurers charge their customers for providing coverage. This change is the "premium" or the "written premium." Insurers then "earn" these premiums in proportion to time the policy has been in force.

"Calendar year incurred losses" (and loss expenses) are the total of the losses and settlement expenses paid during a calendar year plus the change in the loss and loss expenses reserves established on the books an insurer from the beginning of the calendar year to the end of the calendar year. "Other expenses" are the distribution costs of providing insurance. These include state and local taxes, commissions to agents and brokers, general overhead, and the like.

Statutory underwriting income (before income taxes) can be defined as:

Statutory Underwriting income =

Earned Premiums -
Calendar Year Incurred Losses and Loss Expenses -
Other expenses

For example, suppose an insurer earned $4,500,000 in premiums on policies in force. During the same time it paid $2,000,000 in losses and loss settlement expense. Suppose further it started the year with $1,900,000 in

reserves, ended with $2,500,000 in reserves and incurred $1,000,000 in other expenses. Then this insurer's statutory underwriting income would be

$900,000 =

$4,500,000 -
($2,000,000 + ($2,500,000 - $1,900,000)) -
$1,000,000

The incurred losses and loss expenses in statutory accounting are the losses and loss expenses incurred during the calendar year. These amounts, called "calendar year incurred losses" for brevity, may or may not match the premium revenue earned during the same calendar period. Calendar year incurred losses can arise from accidents that occurred during the year or from accidents that occurred in other years. The incurred losses and loss expenses that do match the premiums earned during the calendar year are the losses and loss expenses arising from insured accidents occurring during the calendar year.[4] These later incurred losses and loss expenses are called "accident year incurred losses."

[4] Under some policies, called claims-made policies, coverage is triggered when a claim is reported and not when it occurs. Accident year losses in this case includes the claims made during the calendar period.



### *RESERVE STRENGTHENING AND THE DIFFERENCE BETWEEN CALENDAR YEAR INCURRED LOSSES AND ACCIDENT YEAR INCURRED LOSSES*

"Reserve strengthening" is generally defined implicitly or explicitly by p/c actuaries as the difference between calendar year incurred losses and accident year incurred losses when this difference is positive. "Reserve weakening" is generally defined by casualty actuaries as the difference between calendar year incurred losses and accident year incurred losses when that difference is negative.

The relationship of calendar year incurred losses and accident year incurred losses takes a simple mathematical form that is well known to casualty actuaries. In an article on the CAS Syllabus from at least 1977 to 1990[5], David Skurnick states this relationship:

> To prove this theorem, we first show that:
> [accident year y ultimate incurred losses] =
> [calendar year y paid loss] +
> [12/31/y required reserve] -
> [12/31/(y-1) required reserve]
>
> [...and...]
>
> As a corollary, a calendar year incurred loss will be the same as an accident year loss,

[5] Skurnick, David A., "A Survey of Loss Reserving Methods," *Proceedings of the Casualty Actuarial Society*, Volume LVIII, (1972), pages 16-62.

provided the beginning and ending carried total loss reserves are at the proper level or provided that these two are inaccurate by equal amounts.

Where an insurer's evaluation of its calendar year incurred losses do not match its evaluation of its accident year incurred losses for the same year, it necessarily has changed its estimate of the proper level of the required reserves from the beginning of the calendar year to the end of the calendar year. This difference flows directly into statutory underwriting income and creates a mismatch in the timing of earned premiums and incurred losses and loss expenses.



The formula[6] "Calendar Year Incurred Losses - Accident Year Losses" gives a simple definition to "reserve strengthening" when it is positive and "reserve weakening" when it is negative. It also defines these words in a way that accounts for changes in the reserve margins for whatever reason. It also relates, in a simple manner, underwriting income and the process of loss reserving.

An example will help clarify these concepts. Suppose an insurer starts the year 1994 with $1,000,000 in aggregate loss reserves, pays $2,000,000 in losses during the year, and ends the year with $1,400,000 in aggregate

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[6] The formula: Calendar Year Incurred Losses - Accident Year Incurred Losses translates into:

> [Calendar Year Paid Losses + (Year End Reserve - Year Beginning Reserves)] - [Losses Paid During the Calendar Year for the Current Accident Year + Year Ending Reserves for the Current Accident Year]

which can then be expanded into:

> [(Losses Paid During the Calendar Year for Prior Accident Years + Losses Paid During the Calendar Year for the Current Accident Year) - (Year Ending Reserve for Prior Accident Years + Year Ending Reserve for the Current Accident Year) - (Year Beginning Reserve for Prior Accident Years)] - [Losses Paid During the Calendar Year for the Current Accident Year + Year Ending Reserves for the Current Accident Year]

which then simplifies to:

> [(Year Ending Reserves Reserve for Prior Accident Years - Year Beginning Reserves) + (Losses Paid During the Calendar Year for Prior Accident Years]

reserves. The calendar year incurred losses are equal to $2,400,000 (= $2,000,000 + $1,400,000 - $1,000,000).

Suppose further that these calendar year numbers breakdown into the following accident year categories:

Beginning 1994 Calendar Year Reserves:

| | |
|---|---|
| Accident Year 1991 | $200,000 |
| Accident Year 1992 | 300,000 |
| Accident Year 1993 | 500,000 |
| Total | $1,000,000 |

Loss Payments During the 1994 Calendar Year:

| | |
|---|---|
| Accident Year 1991 | $200,000 |
| Accident Year 1992 | 200,000 |
| Accident Year 1993 | 300,000 |
| Accident Year 1994 | 1,300,000 |
| Total | $2,000,000 |

Ending 1994 Calendar Year Reserves:

| | |
|---|---|
| Accident Year 1991 | $ -0- |
| Accident Year 1992 | 200,000 |
| Accident Year 1993 | 300,000 |
| Accident Year 1994 | 900,000 |
| Total | $1,400,000 |



At the end of Calendar Year 1994, the insurer evaluated his Accident Year 1994 losses at $2,200,000, the sum of the Accident Year payments ($1,300,000) and the Accident Year 1994 reserves evaluated at the end of 1994 ($900,000). The Calendar Year 1994 losses were $2,400,000, which means there has been $200,000 of reserve strengthening ($2,400,000 - $2,200,000.)

The Calendar Year losses can then be broken into payments and reserve changes for each individual Accident Year:

Calendar Year 1994 Losses =

| *Accident Year* | *Ending Reserves* + | *Payments* - | *Beginning Reserves* = | *Accident Year Contribution to Calendar Year* |
|---|---|---|---|---|
| 1991 | $ -0- | $ 200,000 | $200,000 | $ -0- |
| 1992 | 200,000 | 200,000 | 300,000 | 100,000 |
| 1993 | 300,000 | 300,000 | 500,000 | 100,000 |
| 1994 | 900,000 | 1,300,000 | -0- | 2,200,000 |

The Calendar Year 1994 Losses less the Accident Year Losses are then: Ending Reserves on Prior Years plus the Payments on Prior Years less the Beginning Reserves on Prior Years. The current Accident Year 1994 losses are subtracted out ($0 + $100,000 + $100,000 + $2,200,000 - $2,200,000 = $200,000), leaving only reserve values and payments on prior accident years contributing to reserve strengthening.

The example makes clear the connection between "reserve strengthening" and the IRS Regulation, Regs. 1.846-3(c)(3). The difference between Calendar Year Incurred Losses and Accident Year Losses is the difference between end reserves and beginning reserves for prior accident years and payments on prior accident years claims made during the year. Regs. 1.846-3(c)(3) calls this number, when positive, "reserve strengthening."

*RESERVE STRENGTHENING AND UNDERWRITING CYCLES*

In measuring changes in statutory income, a p/c actuary must always consider the impact of changes in reserves. However, in studying changes in the level of statutory underwriting income over time the phenomenon of underwriting or profit cycles is of paramount importance. Any definition of reserve strengthening must consider the impact of the reserve strengthening during underwriting profit cycles.

In discussing the impact of reserve changes on underwriting income, reviewers often discuss this impact in terms of the effect of reserve strengthening and weakening on the underwriting cycle. Underwriting or profitability cycles have been with the p/c industry through out the twentieth century. Barbara Steward, a noted economist and analyst of profit cycles defines[7] these cycles as:

[7] Steward, Barbara D., "Profit Cycles in Property-Liability Insurance," in John D. Long and Everett D. Randall(eds.), *Issues in Insurance*, Volume 1, Third Edition (Malvern, PA: The American Institute for Property and Liability Underwriters, 1984), pp. 273-334.



> . . . a series of changes in some measure of profitability that follows a pattern similar to the pattern in previous and subsequent years of changes in profitability.

In the same article, Ms. Steward measured and charted profitability cycles over the period, 1944 to 1986.

Commentators[8] have ascribed these profit cycles to various causes. Some believe profit cycles stem from an inherent lag in information, the link between underwriting income and investment income, or the competitive structure to the p/c industry. Whatever the view, most commentators note a industry wide, inverse relationship between reserve strengthening and profit cycles. When accident year incurred losses are at their highest, and underwriting income is low, calendar year incurred losses are less than accident year losses with the effect of artificially increasing low underwriting income. On the other end of the underwriting cycle, when underwriting income is high, the current calendar year incurred losses are higher than the current accident year incurred losses. An obvious interpretation is that insurance managers build reserve strength when they have the money and release it when profits fall.

Kevin Ryan, the president of the National Council on Compensation Insurance ("NCCI"), described in a recent

[8] See for example, Feldblum, Sholom, "Underwriting Cycles and Insurance Solvency," (Casualty Actuarial Society 1992 Discussion Paper Program), pp. 383-438.

article[9] the impact of reserve strengthening on the workers compensation line of business.

> The impact of reserve changes on the loss ratio is obvious . . . they make bad years look better and good years look worse than they actually were. At the beginning of this cycle, from 1978 through 1981, extremely good results were obscured by modest reserve strengthening. In the following four years the opposite condition prevailed: the very dismal accident year results were masked by significant reserve weakening. As the cycle progresses, we see further reserve strengthening, which should persist into the 1990's.

His remarks are typical of actuaries evaluating the results of insurance company operations in terms of the relationship of profitability to loss reserves.

*COMMON ACTUARIAL USES OF THE WORD RESERVE STRENGTHENING*

Among some p/c actuaries, especially those that sign a "Statement of Actuarial Opinion", the term "reserve strengthening" has come to mean a one-time, significant change in the assumptions or methodologies used to compute the reserves which results in a material change to the reserves. However, this is a subset of all p/c actuaries and

[9] Ryan, Kevin M., and Richard I. Fein, "A Forecast for Workers Compensation," *NCCI Digest*, Volume III, Issue IV (December 1988).



their work includes only a small percentage of all p/c actuarial work. Restricting the words "reserve strengthening" and "reserve weakening" to one-time changes in assumptions and methods would limit use of the term in measuring the impact of reserve changes on underwriting income.

This use of the restricted definition of the term "reserve strengthening" is a recent development. As late as year end 1989, only eight states required a Statement of Actuarial Opinion. Since that time, the instructions to the Annual Statement, required by every state, call for such a statement. The instructions now call for the opining actuary to examine the assumptions and methods used in determining loss reserves. The instructions call for the opining actuary to discuss several materials items including:

> if there has been any material change in the actuarial assumptions and/or methods from those previously employed, that change should be described in the statement of actuarial opinion inserting a phrase such as: . . .[10]

The Statement of Actuarial Opinion is a recent source of the restricted definition of reserve strengthening.

It is true that reserve strengthening and reserve weakening can be caused by changes in valuation methods and assumptions. However, there are several important situations where this restricted definition will not fit. For

[10] National Association of Insurance Commissioner, Annual Statement Instructions: Property and Casualty, (1993 ed.), page 9.

example, the broad effect of reserve strengthening and weakening on the underwriting cycle's profitability is too systematic to be solely related to idiosyncratic changes at individual companies.

Even among p/c actuaries that act as loss reserve analysts only, the restricted definition of "reserve strengthening" will not always fit their work. Loss reserves represent a loss analyst's estimate of the monies to by paid in the future for insured accidents occurring in the past. At the time of valuation there is a range of possible outcomes. Good reserving procedure dictates an analyst use several methods to quantify loss reserves. After using several methods, he or she uses judgment to weight the likelihood of the several methods. For most reserve evaluations, it would be hard to separate changes in assumptions and methods from changes in judgment and the impact of these changes on loss reserves. If reserve strengthening and reserve weakening is to have a universal meaning, then it must mean the impact of reserve changes on calendar year underwriting income and not the meaning developed by some for the Statement of Actuarial Opinion.

Two broad categories are sometimes used to discuss loss reserving approaches. One approach is the direct approach of loss reserving, while the other is the indirect approach of loss reserving. In the direct approach the loss reserves are established for each part of the claims inventory; known claims, Incurred-But-Not-Reported-Claims ("IBNR")



and loss adjustment expenses ("LAE".)[11] The sum total of all the pieces represent the estimated loss liabilities of the insurer. Among claims adjusters and claim management personnel, increases in reserves on individual claims is sometimes called "reserve strengthening", but increases in the reserves for individual claims may be offset by decreases in the IBNR reserves. Thus, the adjusters' definition of "reserve strengthening" has a very limited use in determining underwriting income.

In the indirect approach, the losses needed to ultimately settle claims ("ultimate losses") are first determined. The difference between ultimate losses and paid losses are an estimate of loss liabilities. To see the interplay of judgment, assumptions and methods, one only has to look at some widely used indirect methods of reserve valuations.

Most indirect loss reserve methods assume a stable pattern of claim emergence and claim settlement. Actuarial loss reserve methods are only limited by the goals of a loss reserve review and the imaginations of the loss reserve analysts. Even so, there are some methods that appear most often in actuarial reports. They are loss development methods, exposure methods, and Bornhuetter/Ferguson methods.

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[11] This components can be further broken down to reserves established on reported claims (Adjusters Case Reserves), reserves for further increases reported claims (Supplemental Reserves), reserves for direct settlement costs (Allocated Loss Adjustment Expense Reserves, and indirect settlement costs (Unallocated Loss Adjustment Expenses.)

Loss development methods assume the recorded losses or claim counts grow in a stable manner. Loss development methods use the growth rates (known as age-to-age development factors) to project final values. The loss development methods assume losses, claims, or other statistics grow during development periods in a regular way. By analyzing the growth rates during common development periods, the loss reserve analyst attempts to forecast future patterns of growth.

Exposure methods relate losses and claims to some measure of exposure. The analyst adjusts exposure units, losses, and claims from older periods to bring this data to current conditions. Adjusted data then provide an estimate of the relationships between exposure units and losses or claims for the latest period. This method is often used when direct measurements of losses are too immature to give reliable projections of mature losses.

Exposure units measure the amounts at risk in a book of business. They can be fixed physical quantities such as the number of cars insured for a year. They can also be quantities that vary with time. If the exposure bases are not of the fixed physical type, they must be adjusted to the level of the immature year.

Bornhuetter/Ferguson methods are hybrid methods. They blend losses estimated using an exposure method with losses estimated using the development history embedded in a loss development method.

If a company were to use only one method, say the loss development method, then "reserve strengthening"



might be synonymous with a change in methods or assumptions. For example, in the loss development method, the loss reserve analyst must project reported losses to their ultimate settlement values. The last period of projection is known as the "tail." The loss reserve analyst must project from the time the company loss data ends to the time when all settlements are completed. Many companies using a loss development approach to loss reserving quantify their "tail factors" using industry-wide data. If a company increased its "tail factors," then the reserves on older accident years would increase. Calendar year income would then decrease due to "reserve strengthening" and this "reserve strengthening" could be traced back to the changes in "tail factors." This is a situation where the restrictive definition and my definition would agree.

The situation described in the preceding paragraph is common, but what is more common is the situation where the loss reserves stated in the Annual Statement represent a judgmental weighing of combinations of Loss Development methods, Bornheutter/Ferguson methods and Exposure methods. From year to year the assumptions underlying each method can change and the judgmental weighing of the combination of methods can change. In a loss reserve opinion, required as part of the Annual Statement filings to state regulators, a p/c actuary may well describe these changes as material changes in assumptions and methods, but he or she would not be able to separate the impact of changes in assumptions, methods and judgment on underwriting income.

Indirect methods of loss reserving depend on actuarial data related to the frequency and severity of loss,

exposure units, loss development factors and other actuarial data. In direct methods, the components of the loss reserve are separately quantified. There is a separate quantification for the components known as case reserves, supplemental reserves, IBNR reserves, and LAE reserves. The direct method of loss reserving is even less susceptible to the restricted definition of "reserve strengthening." This is because the direct method is often dependent, at least in part, on management's view of operations. Loss reserves are often set based on the relative size of these reserves to premiums, individual reserves, claim counts, policy counts, or other measurements of business activity. Separating the effect of reserve changes in these components due to changes in assumptions and methods is harder still than in the indirect method.

The loss reserve practice of Atlantic Mutual as of December 31, 1985 and December 31, 1986 are examples of a direct method of loss reserving. They are also examples where the restrictive definition of "reserve strengthening" would not fit the common use of this term. According to Atlantic Mutual's p/c actuary, Richard J. Hertling, FCAS:[12]

> Atlantic Mutual did not establish its booked unpaid losses by first estimating an amount of ultimate losses incurred loss and then subtract paid losses from that figure. Instead, Atlantic Mutual made separate calculations of each component of unpaid losses.

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[12] Letter of June 28, 1994 from Peter K. Lathrop to Phillip A. Pillar regarding *Atlantic Mutual Insurance Co. and Includible Subsidiaries v. Commissioner, USTC Docket No. 25767-93.*



In an attachment to that same letter, an exhibit displayed the adverse development of Atlantic Mutual's December 31, 1985 and December 31, 1986 loss reserves as of December 31, 1993. At December 31, 1985, the reserves started at \$474.2 million and developed to \$562.7 million, an increase of \$88.5 million by December 31, 1993. The total "reserve strengthening," as defined in this report, would be \$88.5 million, or 18.7% of the starting reserve. Using the restrictive definition of "reserve strengthening," however, Atlantic Mutual may not have done any "reserve strengthening."

According to Mr. Hertling, the method used to set reserves at Atlantic Mutual was as follows:

> Atlantic Mutual's unpaid losses and unpaid loss adjustment expenses at December 31, 1985 and December 31, 1986 consisted of the following three elements:
>
> (1) the aggregate of the individual estimates of unpaid losses on claims that had been reported to Atlantic Mutual by year-end ("case losses" or "reported losses"),
>
> (2) the estimated unpaid losses on claims that had occurred by year-end but had not been reported to Atlantic Mutual as of that date ("incurred but not reported losses" or, simply, "IBNR losses"), and
>
> (3) unpaid loss adjustment expenses ("LAE").

Atlantic Mutual included management reserves for both losses and allocated LAE (ALAE) as deemed necessary. Theses management reserves were in existence since 12/80. The 12/85 and 12/86 management reserves pertained mostly to ALAE and were established because it was recognized that the calendar year paid to paid method for setting ALAE reserves resulted in inadequate ALAE reserves. The reserves were established to address this inadequacy.

In the process described by Mr. Hertling, the loss reserving decisions were diffused throughout Atlantic Mutual's organization. The claims department determined the individual case reserves (without, apparently, an actuarial estimate to the Incurred-But-Not-Enough-Reported reserve[13]), The accounting department determined the LAE reserves. The actuarial department monitored the reserves during the year. And senior management determined the total reserve by determining a residual amount called the "management reserve." Reserve strengthening did occur for the December 31, 1986 total reserves, but it may not have been as a result of a change in reserve assumptions and methods.

The loss reserving process for most insurance companies is a complex process. In some companies, such as Atlantic Mutual, different functional areas determine parts of the overall loss reserves. In other companies the loss

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[13] P/C actuaries have long recognized that the sum total of reserve on reported claims, case reserves, will not be adequate to settle these known cases. When reserves are established directly, one component will be the Incurred-But-Not-Enough-Reported or Supplemental reserve.



reserving process may be divided along marketing divisions. Divisions that handle large national accounts can set loss reserves for their markets. Likewise, divisions that handle small commercial or retail markets can set loss reserves for their markets. The restrictive definition of "reserve strengthening" will not fit these situations as it did not fit Atlantic Mutual. In these common, complex situations most p/c actuaries would define "reserve strengthening" using the definition given at the beginning of this report, i.e., "reserve strengthening" is the difference between calendar year incurred losses and accident year incurred losses when that difference is positive.

*DISTINGUISHING RESERVE ADEQUACY AND RESERVE STRENGTHENING*

Two terms that are easily confused when discussing loss reserves are the terms "reserve strengthening" and "reserve adequacy." The differences between these two terms are especially important when discussing the impact of changes in loss reserves on underwriting income. By an "adequate" loss reserve, a p/c actuary means that the loss reserves established on the books of an insurer as of the accounting date represent the amount of money required to fully settle claims that have already occurred. Thus, reserve adequacy is a concept related to an insurers financial position *at one point in time*. Reserve strengthening, both as used generally and in its restricted sense, describes the impact of changes in reserves from *one accounting date to another*.

The balance sheet of an insurer represents the financial position of an insurer at a point in time. The "surplus as regards policyholders" is the statutory equivalent

of "owner's equity" and is the difference between the assets and liabilities of an insurer. If loss reserves are inadequate, then the liabilities are understated and the surplus as regards policyholders if overstated. In this case the financial position of an insurer is not as strong as its accounting statements would indicate. Thus reserve adequacy is related to the financial position of an insurer.

As stated before, "reserve strengthening" is related not to the financial position of an insurer at one time, but rather to income. Income represents the change in financial position from one accounting date to another. At any point in time, an insurer establishes the reserves for the most recent claims and re-establishes the reserves for claims first established during prior accounting period. "Reserve strengthening" has a negative impact on income from the subsequent valuation of these older claims.

Reserve adequacy can only be measured with hindsight. Insurers are supposed to establish the full liabilities for loss at year end. These liabilities can only be estimates. Even so, they represent "best estimates" and are not suppose to be deliberately understated or overstated. With time, however, the reserves established at a point in time for a particular block of accident year claims may prove to have been overstated or understated at prior accounting dates.

The impact of "reserve strengthening" on underwriting income can be determined by looking at the runoff of reserves from the beginning of the accounting period to the end of the accounting period. At the beginning of the accounting period there are no reserves for the current



accident year, only for prior accident years. Thus, "reserve strengthening" as it impacts underwriting income is only concerned with the change in reserve adequacy for prior accident years.

*CONCLUSIONS*

Loss reserving has a pervasive influence on the income determination of a property-casualty insurance company. Reserve strengthening and reserve weakening can be understood in terms of the effect of reserve changes on income. A definition that restricts reserve strengthening to changes in assumptions and methods only and not to the overall effect of reserve changes is too restrictive to use in the determination of income.

A natural definition that highlights the effect of changes in reserves on income is one where "reserve strengthening" is the positive difference between calendar year incurred losses and accident year incurred losses.

/s/ Raymond S. Nichols — Dec. 15, 1994

Raymond S. Nichols

Date

*BIOGRAPHICAL SUMMARY AND QUALIFICATIONS*

I earned a bachelor of arts degree in mathematics from the University of Bridgeport and a master of science degree in mathematics from Ohio State University.

I am a Fellow of the Casualty Actuarial Society (CAS) by examination; I also am a Member of the American Academy of Actuaries, the Casualty Actuaries of New England, and the international nonlife actuarial organizations ASTIN and AFIR.

I am currently a member of the Casualty Task Force of the National Association of Insurance Commissioners ("NAIC"). I served as chair of the Data Management and Information Committee for the CAS from 1988 to 1990 and served as a member for six years prior to becoming chairman. I am a member of the Textbook Committee for the Insurance Accounting and Systems Association ("IASA") and wrote the chapter on loss reserving for the latest edition of their property - casualty accounting textbook.

My work experience includes 21 years in the property-casualty insurance industry in actuarial, management, consulting and regulatory positions. I have been extensively involved in rate making and reserving activities both for small, medium and large primary insurance companies. For 15 years I held positions at three different insurance companies, being the chief actuary for two and a senior actuarial officer for a third.

From 1973 to 1979, I trained as an actuary with Travelers Insurance Group. At the end of 1979 to the middle



of 1984, I was the chief actuary of the Covenant Group, a regional insurance group domiciled in Connecticut. After leaving Covenant Group in 1984, I returned to Travelers as second vice president and actuary in charge of a loss reserving and product costing for commercial lines. In 1988, I was recruited by the New Hampshire Group, a division of American International Group ("AIG"), to serve as senior vice president and chief actuary.

For five years, after leaving AIG, I was an actuarial consultant both with a large international actuarial consulting firm (Milliman & Roberston, Inc.) and as an independent in my own private practice. My most recent position is that of Director of the Property Casualty Division of the Connecticut Insurance Department.

Appendix I

Raymond S. Nichols
Fellow of the Casualty Actuarial Society
Member of the American Academy of Actuaries

75 North Quaker Lane
West Hartford, Connecticut 06119
Telephone (203) 232-9009

| | |
|---|---|
| Experience Highlights | *Connecticut Insurance Department*, Hartford, CT. |
| Presently | *Director of the Property and Casualty Division.* Recruited to this senior regulatory position by the Commissioner of Insurance for the State of Connecticut. Responsible for all property and casualty insurance rate and policy form regulation. Also, responsible for the regulation of the involuntary insurance markets in the state. Manage a professional staff of twelve including two principal examiners, five associate examiners, one actuary, two system analysts, and two clericals. Report to the Commissioner of Insurance. |



| | |
|---|---|
| 1991 to 1994 | *Private Consulting Practice*, West Hartford, CT. |
| | *Consulting Actuary.* Developed an independent casualty actuarial consulting practice. This practice provided actuarial management services to small insurance companies and other small insurance organizations. Services included loss reserving, ratemaking and product costing, filing and regulatory management, management report development, financial planning, and reinsurance reviews. |
| 1989 to 1991 | *Milliman & Robertson, Inc.*, Bloomfield, CT. |
| | *Consulting Actuary.* Employed to develop a casualty actuarial consulting practice in the Hartford office and to support the casualty staff in the Boston office of this international actuarial consulting firm. Billed approximately four hundred thousand dollars in the first full year of the Hartford casualty practice. Developed major clients among insurance regulators, highly protected risk insurers, general insurance companies and self insurers. Completed a major study of the Connecticut Automobile Insurance System for the Connecticut Insurance Department. |

1988 to
1989 *AIG/New Hampshire Insurance Group*, Manchester, NH.

*Senior Vice President and Chief Actuary.* Recruited to this subsidiary of the American International Group by the President. Responsible for managing all actuarial functions for this general insurance company whose annual revenue approached one billion dollars. Reorganized the actuarial staff into three departments: actuarial systems, costing/reserving and pricing. The primary work products of these departments were financial plans and loss budgets, profit center profitability reports, rate reviews and price changes, new product pricing studies, internal and external loss reserve reports, management information systems, agent experience reviews and statistical studies for filing support. Part of the senior team reporting to the President.

1984 to
1988 *The Travelers Insurance Companies*, Hartford, CT.

*Second Vice President and Actuary.* Recruited back to the Travelers by the CFO of the newly organized Agency Marketing Group. Built a professional department of twenty including four actuarial officers, twelve actuaries and four support staff



members. Responsible for measuring the needed levels of loss and allocated loss expense reserves generated by one and a half billion dollars of commercial lines premiums per year. Also, responsible for testing the adequacy of commercial lines rates. Established quarterly reserve reviews for senior management, semiannual rate reviews for a competitive pricing unit, and monthly reserve reports for a financial reporting department. Represented Travelers at various bureau and pool actuarial committees including those of the Insurance Services Office, the New York Medical Malpractice Insurance Association, and the Industrial Risk Insurers. Coordinated the efforts of an MIS applications unit. Responsible for developing actuarial students apprenticed in commercial lines.

1980 to
1984 *Covenant Group*, Hartford, CT.

*Second Vice President and Chief Actuary.* Reported to the CFO. Responsible for the actuarial function of an $80 million regional multi-line property casualty insurance company. Broadened the function to include product development and market support system services along with more traditional financial reporting and loss reserving services. Organized a staff of four actuarial and technical support professionals. Trained loss

reserve specialists to do quarterly reviews of the company's loss and loss expense reserves. Supplied expertise and pricing information to the marketing department for their reviews of premium rates. Designed contracts and financial models for agent compensation agreements. Designed dividend programs for the product management department to offer as new products. Oversaw the development of an actuarial data base with associated access programs. Helped cost claim settlement contracts with outside legal firms for the claim department. Aided in the analysis and negotiation of reinsurance contracts.

1973 to 1980 *The Travelers Insurance Companies*, Hartford, CT.

*Senior Actuarial Assistant*. Provided actuarial pricing support to middle management for various lines of insurance including commercial property, worker's compensation, homeowners, and private passenger automobile. Supervised the streamlining and enhancement of an automated system for reviewing private passenger automobile rates. Represented the Travelers at various industry bureau meetings. Supervised the work of other actuarial students and technical support personnel. Aided in the loss rating of large insureds.



*The Travelers Insurance Companies*, Hartford, CT.

*Programmer Analyst*. Prepared detailed system specifications and COBOL program instructions according to company standards. Maintained and enhanced two large premium and tax systems.

Professional Fellow of the Casualty Actuarial Society.

Member of the American Academy of Actuaries.

Associate of the Conference of Consulting Actuaries.

Member of the Casualty Actuaries of New England.

Member of ASTIN, the international non-life actuarial association.

Member (1985 - 1991) and Chairman (1990 - 1991) of the Casualty Actuarial Society's Committee on Data Management and Information.

Member of the American Risk and Insurance Association.

| | |
|---|---|
| Other | Author of the Insurance Accounting and Systems Association's ("IASA") 1991 textbook chapter on loss reserving. |
| | Member of Who's Who Worldwide and included in the 1993/1994 Who's Who Registry of Global Business Leaders. |
| | Past lecturer in forecasting and reinsurance at the University of Hartford. |
| | Past lecturer at the Casualty Loss Reserve Seminar on basic reserving methods and reserving methods for small companies. |
| | Past lecturer at the Casualty Actuarial Society's Ratemaking Seminar on data for ratemaking. |
| | Student of the Insurance Data Management Association ("IDMA"). Completed seven of eight professional examinations leading to the Certified Insurance Data Manager ("CIDM") designation. |
| Education | The Ohio State University, Columbus, Ohio. Masters of Science, Mathematics, 1973. |
| | The University of Bridgeport, Bridgeport, CT. Bachelors' of Arts, Mathematics, 1971. |



Report

of

Ruth E. Salzmann, F.C.A.S., M.A.A.A.

Respondent's Expert

in

*Atlantic Mutual Insurance Co. et al., Petitioner*

v.

*Commissioner of Internal Revenue, Respondent*

Docket No. 25767-93

United States Tax Court

December 12, 1994

RESPONDENT'S EXHIBIT AG
DOCKET NO. 25767-93

*Introduction*

My assignment from the IRS was to define the term "reserve strengthening" and to explain what the term means in the property and casualty ("P/C") insurance industry. This report will, therefore, include definitions of reserve strengthening, explain how reserve strengthening affects the income statement, describe its measurement and the time-delay needed for such a measurement, and discuss the common misconceptions in its use and measurement.

To introduce myself, I am a Fellow of the Casualty Actuarial Society and a member of the American Academy of Actuaries. My employment through 1983 was with major P/C insurance companies with executive responsibilities in actuarial areas. Currently I am a consultant on matters relating to P/C loss and loss expense reserves. My industry and professional activities were primarily on subjects relating to P/C financial reporting, as were my many published works. My current resume is attached as Appendix I.



*General Background Relating to "Reserve Strengthening":*

The term "reserve strengthening" is most often used in connection with the income statements of P/C insurers. All income statements match costs with revenues for an accounting period. In P/C insurance, the costs represent the losses generated by the protection provided during the accounting period - or the losses that occurred during that same period of time. As many of the losses[1] that occur take considerable time to settle, the unpaid amounts on these losses as of the accounting date become liabilities, and are commonly referred to as loss reserves[2] in P/C insurance literature. The losses incurred for the accounting period therefore become the sum of losses paid during the accounting period, plus the loss reserves at the end of the period, less the loss reserves at the beginning of the period. These loss reserves are not only unknown as to number (many are not yet reported),[3] but are also unknown as to amount. Settlement costs are not fixed and can vary widely in size and in the timing of settlement, both of which are affected by future contingent developments.

Because of these uncertainties, loss reserves are "best estimates". Their accuracy will be determined after all

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1 For purposes of this report, the terms "loss" and "claim" are used interchangeably, and "loss/claim amounts" include loss expenses (costs associated with the settlement of losses).

2 In this report, "loss reserves" are the undiscounted value of unpaid losses.

3 Reserves for these claims are known as "IBNR," an abbreviation for "incurred but not reported".

settlements are final. Reserves are adequate when reported reserves exceed future payments thereon, and are inadequate when they fall short. The "margin" of adequacy (inadequacy) is the adequacy (inadequacy) in absolute dollars.[4] And when this margin of adequacy in the beginning and ending loss reserves changes, the effect is to over or understate losses incurred and thus distort the net income reported for the accounting period. When the margin of adequacy increases (or the margin of inadequacy decreases), it is called "reserve strengthening." When the reverse is true, it is called "reserve weakening".

*Definitions of "Reserve Strengthening"*

The definition of "reserve strengthening" (or "reserve weakening") can, therefore, be stated as follows:

> Reserve strengthening (or reserve weakening) is a term used in connection with P/C income statements. It refers to the dollar change in the margin of adequacy in the beginning and ending reserves for unpaid losses for that accounting period. The change can be ***for whatever reason and for any amount***. If ending reserves are more adequate (or less inadequate) than the beginning reserves, there is reserve strengthening in the accounting period and net income is understated; conversely, if ending reserves are less adequate (or more inadequate), there is reserve weakening and net income for the accounting period is overstated.

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[4] Because adequacy measurements are negative quantities (as explained later), the elimination of signs is less confusing to the reader.



Rephrasing this same definition in other ways, "reserve strengthening" can also be stated as follows:

1. The excess of calendar-year reported losses over the final paid costs of losses that occurred in the respective accident year;

2. The effect on calendar-year results due to an increase in the margin of adequacy in the ending reserve (over the beginning reserve);

3. The excess of reported losses over losses for the current accident year *if* the latter are accurately estimated.

*Measurement of "Reserve Strengthening"*

Reserve strengthening, by definition, is the dollar change in the margin of adequacy of ending over beginning loss reserves. To measure the strengthening (weakening), one must first measure the adequacies of loss reserves involved. A loss reserve is adequate when the subsequent developments on those unpaid claims are less than the reserve originally reported for them. The adequacy (inadequacy) of a 12/31/n reserve is derived by subtracting that reserve from the sum of subsequent payments and *estimated* amounts still unpaid on ≤ accident year claims. Thus an adequacy is a minus quantity in P/C financial reporting. Adequacies are generally compiled annually by development age (reserve date being 0), but these compilations continue to be estimates until all losses occurring on or before the reserve date are final. At that point in time when actual adequacies become know, the

dollar change in the margins, or the actual reserve strengthening, can also be determined. The following is an illustration of such a calculation:

*Measurement of Reserve Strengthening in Calendar Year (n)*

| Accounting Date | (1) Reported Reserves | (2) Final Subsequent Payments | (2) - (1) Adequacy (-) Inadequacy (+) |
|---|---|---|---|
| 12/31/n | $10,000 | $9,500 | $-500 |
| 12/31/n-1 | 9,000 | 9,100 | 100 |
| Δ | 1,000 | 400 | -600 |

The reserve strengthening that occurred in calendar year (n) was $600, the change from an inadequacy of $100 as of 12/31/n-1 to an adequacy of $500 as of 12/31/n.

*Common Uses and Interpretations of "Reserve Strengthening"*

It takes time to get an accurate measurement of the actual reserve strengthening that occurs in any accounting period - and in most cases, a long time. Preliminary statements regarding strengthening are therefore only approximations. In analyzing P/C income statements, it is the *need-to-know now* that has given rise to various interpretations and measurements of reserve strengthening. If one does not have to put a value on it, the term generally means an increased confidence in the adequacy of current



reserve levels. When an amount is stated, the amount, (representing the increased confidence) is often rather crudely measured in non-actuarial circles. Sometimes the dollar measurement is the dollar increase in bulk reserves,[5] including or excluding IBNR. The more common use of the term "reserve strengthening" is a euphemism for the deficiency,[6] or inadequacy, of prior reserves that adversely impacted the income reported in the current accounting period. The underlying assumption in this latter usage, knowingly or unknowingly, is that "this year end we've got it right". It was because of these general misconceptions that prompted me to include the proper definition of "strengthening" in my book.[7]

*Conclusion*

The term "reserve strengthening" can be an important component in the income statement of P/C insurance companies. Because of the delay needed to obtain a precise measurement, only estimates are available on a timely basis. In non-actuarial reporting, the term often means (and is a euphemism for) the deficiency, or inadequacy, of prior reserves that adversely affected the earnings in the current accounting period. It is this meaning or measurement that is

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5 Bulk reserves are those not identified by claim filed that provide for claims not yet reported (IBNR) and for adjustments to aggregate case estimates on claims already reported.

6 The excess of the amount paid in the current year plus the amount still unpaid at year end on prior accident-year losses over the loss reserve reported a year ago.

7 See an excerpt from my book in Appendix II to this report.

consistent with the formula used by the IRS in its regulation denying fresh start for reserve strengthening. Though this meaning or measurement is not correct, it is consistent with a common usage of the term in non-actuarial circles.

/s/ Ruth E. Salzmann
Ruth E. Salzmann



Appendix I

## *BIOGRAPHICAL DATA*

*Name:*

Ruth E. Salzmann

*Address and Telephone Number:*

1556 Pine Street
Stevens Point, Wisconsin 54481
(715) 344-8308

*Current Employment Status:*

Retired Executive Vice President and Actuary - Sentry Insurance
Trustee, Advisers Management Trust
Director, John Deere Insurance Group
Consultant, Part-Time

*Date and Place of Birth:*

January 24, 1919
Highland, Wisconsin

*Degrees and Designations:*

Ph.B. - University of Wisconsin- Madison, 1940

FCAS - Fellow, Casualty Actuarial Society, 1947 - present and Past President

MAAA - Member, American Academy of Actuaries, 1965 - present

*Other Insurance Involvements:*

Member, MAF (Midwestern Actuarial Forum), 1968 - _____, and Past President

Director, Sentry Insurance A Mutual Co.

Director, Hanseco Insurance Co.

Casualty Actuarial Society Contributions:

Committee, 1964-68, Committee on Distribution of Losses

Committee, 1964-67, Committee on Annual Statement

Committee, 1964-66, Education Committee

Committee, 1964-67, Examination Committee

Panel, 1965, Report of Committee on Annual Statement

Panel, 1966, Reinsurance Today



Paper, 1967, Schedule P on a Calendar/Accident Year Basis, *PCAS* LIV, 120

Review, 1967 Underwriting Profit from Investments, *PCAS* LIV, 23

Council, 1967-69

Chairman, 1968-71, Committee on Annual Statement

Committee, 1968, Committee On Program

Committee, 1968-75, Examination Consultants

Panel, 1969, Holding Companies, -- Conglomerates, and Congenerics on the Insurance Scene

Panel, 1970, The Changing Annual Statement

Committee, 1970-72, Liaison Representative on Joint Actuarial Committee On Financial Reporting

Paper, 1972, How Adequate are Loss and Loss Expense Liabilities, *PCAS* LIX, 1

Author's Response, 1972, How Adequate Are Loss and Loss Expense Liabilities, *PCAS* LIX, 16

Panel, 1974, Profitability and Investment Income by Line By State

Workshop, 1976, Early Warning Systems

Panel, 1976, The Discounting of Loss Reserves

Vice President, 1976

Chairman, 1976, Planning Committee

Ex Officio, 1976, Program Committee

President Elect, 1977

Committee, 1977-78, Program Committee

President, 1978

Presidential Address, 1979, Accountability: The Actuarial Imperative, *PCAS* LXVI, 74

Ex President, 1979-80

Committee, 1979-84, Nominating Committee

Paper, 1981, RLS Yardsticks to Identify Financial Weakness, *PCAS* LXVIII, 172

Chairman, 1981-82, Nominating Committee



Committee, 1985-88, Committee on Review of Papers-Consultants

*Business Experience:*

1983 - 1984, Sentry Insurance, Exec. V.P. and Actuary

1968 - 1983, Sentry Insurance, V.P. and Actuary

1967 - 1968, INA, Secretary - Und.

1964 - 1967, INA - Life, Group Actuary

1959 - 1964, INA, Assoc. Actuary

1940 - 1959, Hardware Mutuals, Assoc. Actuary

*Publications:*

Books: "Estimated Liabilities for Losses and Loss Adjustment Expenses," 1984, Prentice-Hall

Chapters in "Property - Liability Insurance Accounting," IASA

Chapter 3 - Est. Liab. for Losses and LAE, 1974

Chapter 4 - Est. Liab. for Losses and LAE, 1984, 1986, 1988

Proceedings of the Casualty Actuarial Society:

Papers:

1963, Commercial Package Policies - Rating and Statistics, *PCAS*, Vol. L, p. 87

1963, Rating by Layer of Insurance, *PCAS*, Vol. L, p. 15

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1981, RLS Yardsticks To Identify Financial Weakness, *PCAS*, Vol. LXVIII, p. 172

Addresses:

1979, Accountability: The Actuarial Imperative (Presidential Address), *PCAS*, Vol. LXVI, p. 74

1992, Address to New Members, *PCAS*, Vol. LXXIX. p. 149

Review of Papers:

1961, Reserves for Reopened Claims, *PCAS*, Vol. XLVIII, p. 192



1967, Underwriting, Profit From Investments, *PCAS*, Vol. LIV, p. 23

IASA Proceedings:

Numerous (1949 - 1958)

REFERENCE ON "STRENGTHENING"

Source: Salzmann, Ruth E., "Estimated Liabilities for Losses and Loss Adjustment Expenses," 1984



STRENGTHENING *Strengthening* is the term used to denote the increase in the liability level, or margin, that occurs during an accounting period. The term, as used in property-casualty insurance, is generally a misnomer. If a statement is made that reported results were adversely impacted by $X of "reserve strengthening," the $X generally represents the unfavorable runoff of the beginning liabilities. This runoff is absorbed in the current accounting period, but if the ending liabilities for the new accident year are also inadequate by the same dollar amount, the reported results are not "adversely impacted." Likewise, if the beginning and ending liabilities contain the same margin of adequacy, then no liability strengthening has occurred during the



period. The amount of liability strengthening or weakening that occurs in any calendar year will not be known until developments on both the beginning and ending liabilities are final. A statement regarding the strengthening of "reserves" is true only if the liabilities for new claims are at the strengthened level of old claims. No such guarantee is possible. All statements regarding "reserve strengthening" are approximations at best.

REBUTTAL REPORT

ATLANTIC MUTUAL INSURANCE COMPANY
MUTUAL INSURANCE COMPANY

AND INCLUDIBLE SUBSIDIARIES

v.

COMMISSIONER OF INTERNAL REVENUE

TAX COURT NO. 25767-93

Prepared by:
Raymond S. Nichols, F.C.A.S., M.A.A.A.
January 11, 1995

RESPONDENT'S EXHIBIT AF
DOCKET NO. 25767-93



TABLE OF CONTENTS

*EXECUTIVE SUMMARY*

This report is a rebuttal to the reports of the petitioner's expert witnesses in the Tax Court Case: Atlantic Mutual Insurance Company and Includible Subsidiaries versus the Commissioner of Revenue ("the Atlantic case"). In their reports to the Court, both Irene Bass and James Mac Ginnitie gave definitions and examples of reserve strengthening that actuaries could understand but could not use in the common actuarial analysis of income determination. Their definitions are not wrong, rather, they are specialized.

"Reserve strengthening" has several meanings within the property and casualty ("p/c") actuarial community. Even so, there is a primary use of the term "reserve strengthening" in describing the impact of changes in reserves on statutory income.[1] Neither Irene Bass's definition nor James Mac Ginnitie's definition could be used to determine that impact.

When describing the impact of changes in reserves on statutory income, the use of the term "reserve strengthening" simply means a positive difference between calendar incurred losses and accident year incurred losses. Other, less common uses of the term "reserve strengthening" appeal to actuaries conducting specialized tasks. These specialized tasks may be analyzing an insurer's solvency, formulating a loss reserve opinion, preparing a hindsight review of a

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[1] "Statutory income" includes investment income and underwriting income as stated in the NAIC Annual Statement.



reserve runoff, or other tasks. However, these are narrow aspects of p/c actuarial work.

In the sections on the report that follow, I restate the definition of reserve strengthening as it is commonly known. I then present an example of an insurer's reserve data as that data might change with time. Using this example, I then show how Irene Bass's definition of reserve strengthening and James Mac Ginnitie's definition of reserve strengthening differ from each other and from the common definition.

*INTRODUCTION*

Even the casualty reader of the expert witness reports in the Atlantic case will conclude that "reserve strengthening" does not have one distinct meaning at all times for p/c actuaries. My report to the Tax Court opined that "reserve strengthening" is most often used in the p/c insurance industry to explain the impact of reserve changes on underwriting income. This use is widespread and critically important because reserve strengthening is tied to the matching of revenue and expenses in the accounting statements of a p/c company. The proper matching of revenues and expenses is the most difficult part of income measurement in any business.[2] In the p/c business this matching problem involves the proper matching of "earned premiums" and "incurred losses." Reserve strengthening is at the heart of this matching problem.

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[2] See for example, ***Intermediate Accounting***, Jan R. Williams, Keith G. Stanga and William W. Holder, 4th Edition, The Dryden Press, 1992, pages 48-60.

Where an insurer's year-end evaluation of its calendar year incurred losses do not match its year-end evaluation of the current accident year incurred losses, it necessarily has changed its estimate of the proper level of the required reserves from the beginning of the calendar year to the end of the calendar year. This difference flows directly into statutory underwriting income and creates a mismatch in the timing of earned premiums and incurred losses and loss expenses.[3]

The formula [Calendar Year Incurred Losses - Accident Year Losses] gives a simple definition of reserve strengthening when it is positive, and reserve weakening when it is negative. It also defines these words in a way that accounts for changes in the reserve margins for whatever reason. It also relates, in a simple manner, underwriting income and the process of loss reserving.

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[3] After preparing my report the Tax Court, but before preparing this rebuttal, I read Ruth Salzmann's expert witness report in the Atlantic case. According to her report, Ms. Salzmann would require an accident year be evaluated at final settlement for all claims occurring in the accident year. While this is a theoretically pure definition, an actuarial evaluation is rarely completed after an accident year is settled. At the end of the calendar year, the reserves for the current accident year should be "best estimates" with an equal likelihood they will prove inadequate or redundant. At the end of a calendar year, when accounting statements are prepared and published, the best estimate of the impact of reserve changes on calendar year incurred losses is the difference between calendar year incurred losses and accident year incurred losses.



*DISCUSSION AND ANALYSIS*

Loss reserving if a fundamental p/c actuarial process that impacts the pricing of insurance products, the measurement of insurers income and the measurement of insurers financial position. Words such as "reserve strengthening," "reserve adequacy," "reserve margin," and others are sometimes used by p/c insurance actuaries in ways that are conflicting and confusing. However, it is possible among p/c insurance actuaries to communicate the context in which these words are used and to distinguish their meaning. Below is an example to help clarify this discussion, but first we must define some terms.

An "adequate reserve" is sometimes called the "required reserve." It can only be known with time as the claims incurred before the valuation date are all settled. The "carried reserve" is the reserve actually carried on the book of an insurer at a given accounting date. The difference between the "required reserve" and the "carried reserve" is the "reserve margin." It also cannot be known, except with the passage of time.

"Reserve adequacy" is a term related to an insurer's financial position *at one point in time*. "Reserve strengthening" describes the impact of changes in reserves *from one accounting date to another date*. As the term is commonly used, reserve strengthening is measured using the carried reserves from the beginning of the accounting period to the end of the accounting period. At both the beginning and the end of the period, carried reserves should be the best estimate of the required reserve given the information known as of the valuation date. Subsequent information may prove

the best estimate to be flawed. Nevertheless, when first established, a well-measured carried reserve should have an equal likelihood of being inadequate or redundant, relative to the required reserve.

At the end of an accounting period, the current accident year has only been measured once. It is not possible (for this accident year) to say the first carried reserve is different than the required reserve. For prior accident years, there are at least two carried reserves, the carried reserve at the beginning of the accounting period and the carried reserve at the end of the accounting period. Reserve strengthening is a positive difference between calendar year incurred loss and accident year losses. This difference involves these two carried reserves.

A change in reserve adequacy involves the difference between *two* carried reserves and *two* required reserves. This difference will not be known for years (when all open claims occurring before the respective accounting dates are finally settled). This difference can be described in terms of absolute dollars or relative percentages.

*AN EXAMPLE*

With those terms in mind, consider the following example. Suppose an insurer writes one line of automobile liability insurance and has the reported incurred losses and loss reserve information shown in the following table:



*Incurred Losses:* Accounting Date

| *Accident Year* | 12/31/1992 | 12/31/1993 | 12/31/2025 |
|---|---|---|---|
| 1991 | $ 1,000,000 | $ 1,200,000 | $ 1,300,000 |
| 1992 | 2,000,000 | 2,100,000 | 2,200,000 |
| 1993 | N/A | 3,000,000 | 4,000,000 |

*Carried Reserves:* Accounting Date

| | 12/31/1992 | 12/31/1993 | 12/31/2025 |
|---|---|---|---|
| 1991 | $ 500,000 | $ 500,000 | -0- |
| 1992 | 750,000 | 600,000 | -0- |
| 1993 | N/A/ | 1,000,000 | -0- |
| Total | $ 1,250,000 | $ 2,100,000 | -0- |

*Required Reserves:* Accounting Date

| | 12/31/1992 | 12/31/1993 | 12/31/2025 |
|---|---|---|---|
| 1991 | $ 800,000 | $ 600,000 | -0- |
| 1992 | 950,000 | 700,000 | -0- |
| 1993 | N/A | 2,000,000 | -0- |
| Total | $ 1,750,000 | $ 3,300,000 | -0- |

The calendar year incurred losses for 1993 are \$3,300,000 and are due to the impact of accident year incurred losses. These accident year losses include \$3,000,000 for 1993 and a total change of \$300,000 in incurred losses for 1991[4] and 1992[5] (\$3,300,000 = \$3,000,000 + 200,000 + 100,000). The reserve strengthening of \$300,000 is the positive difference between calendar year incurred losses (\$3,300,000) and accident year incurred losses (\$3,000,000).

By the year 2025 it is possible to look back and determine the relative adequacy of the reserves as 12/31/92 and 12/31/93. The following table displays the difference between the required reserve and the carried reserve:

| *Accounting Date* | *Carried Reserve* | *Required Reserve* | *Difference* | *Relative Adequacy* |
|---|---|---|---|---|
| 12/31/92 | \$1,250,000 | 1,750,000 | (500,000) | 71.4% |
| 12/31/93 | \$2,100,000 | 3,300,000 | (1,200,000) | 63.6% |

We see in this example that the calendar year incurred losses included \$300,000 of reserve strengthening from prior accident years, but that "reserve adequacy" decreased on an absolute dollar basis by \$700,000 (\$700,000 = \$1,200,000 - 500,000) and on a relative percentage basis

[4] \$200,000 is the change from \$1,000,000 as of 12/31/1992 to \$1,200,000 as of 12/31/1993.

[5] \$100,000 is the change from \$2,000,000 as of 12/31/92 to \$2,100,000 as of 12/31/1993.



by 7.8% (7.8% = 71.4% - 63.6). The reason for this apparent anomaly is that the carried reserve for accident year 1993 is in retrospect grossly inadequate at 12/31/93. As of 12/31/93, however, that inadequacy is unknown and does not enter into calculations of reserve strengthening at that time.

Irene Bass and James Mac Ginnitie have each given difference definitions of reserve strengthening. Irene Bass is using "reserve strengthening" in a way that stresses the need for accounting statements to give full disclosure of all material financial information.[6] While this need for full disclosure certainly applies to reporting loss reserves, it is not directly related to income measurement. Irene Bass's definition of "reserve strengthening" is a restricted definition and is not the most commonly understood definition in the p/c insurance industry.

James Mac Ginnitie implicitly gives a definition of reserve strengthening which is tied to reserve adequacy and the measurement of an insurer's financial position. This definition is different from that of Irene Bass and is not one that can be used to measure a p/c insurer's income. The primary and common use of the words "reserve strengthening" in the p/c insurance industry is a use tied to an analysis of an insurer's income. A simple, clean and actuarial definition of reserve strengthening is one that defines it as the difference between calendar year incurred

[6] For a discussion of "Disclosure" in accounting see, for example, *Intermediate Accounting*, note 2, *supra*.

losses and accident year incurred losses when that difference is positive.[7]

My example can be used to explain the differences between the definitions given defined in my report, Irene Bass's report, and James Mac Ginnitie's report. The next section analyzes Irene Bass's definition.

*REPORT OF IRENE K. BASS, F.C.A.S.*

Irene Bass, in her report,[8] creates a definition of the words "reserve strengthening," as follows:[9]

> *Definition of Reserve Strengthening*
>
> With the examples of what does and does not constitute reserve strengthening and with the NAIC instructions as background, a more comprehensive working definition of reserve strengthening for PC insurers can be developed. With respect to reporting

7 It is possible to reevaluate a given accounting statement after time has passed and to develop a "should-have-been" accounting statement as of a given accounting date. This, however, is rarely done. If it is done, then the reserve strengthening or reserve weakening for given accounting year could be restated. However, the measurement of reserve strengthening does not depend on a restated accounting statement. It is often measured with original accounting statement published at the beginning of the accounting year and at the end of the accounting year.

8 "Report on Reserve Strengthening" by Irene Bass, December 9, 1994, hereinafter "the Bass Report."

9 See page 30 of the Bass report.



> reserves in the Annual Statement, reserve strengthening is said to have occurred if there is a one-time (or, at least, unusual and non-periodic), significant change in the and/or methodologies used to compute the reserves which results in a material change to the relative level of adequacy of the total reserve inventory.

Irene Bass states clearly that her definition is not one taken directly from actuarial literature.[10] She then describes the need for "disclosure" of "any especially significant events, coverage, retention or accounting changes that have occurred which must be considered when making such [loss reserving] analyses."[11] Among some p/c actuaries, especially those who sign a "Statement of Actuarial Opinion," the term "reserve strengthening" may well have come to mean disclosure of material one-time, significant change in loss reserving assumptions or methodologies. However, this is a subset of all p/c actuaries and their work includes only a small part of all p/c actuarial work. Irene Bass's definition of reserve strengthening is a restrictive definition and is related to the accounting principle of Disclosure.[12]

Irene Bass, in the Bass report, creates a definition of reserve strengthening that may meet the needs of opining loss reserve analysts, but could not be used to describe the impact of reserve changes on a p/c insurer's income statement. The

10 See page 14 of the Bass Report.

11 *Id.*

12 See, for example, *Intermediate Accounting* note 2, *supra.*

impact on the income statement includes changes in reserve levels from prior accident years for whatever reason. That impact is measured as the difference between calendar year incurred losses and accident year incurred losses.

In my example given above, Irene Bass would not say there was reserve strengthening during 1993 if there was no "one-time (or, at least, unusual and non-periodic), significant change in the and/or methodologies used to compute the reserves which results in a material change to the relative level of adequacy of the total reserve inventory."[13] Even so, the reevaluation of the reserves for older claims at the end of 1993 resulted in a 10% reduction ($300,000) in statutory income. My definition would recognize this impact. Hers would not.

In her own examples, Irene Bass describes several legitimate, but specialized uses of the term "reserve strengthening."[14] In Exhibit 1, Irene Bass describes an example of a change in the actual-to-required ratio of loss reserves for accident years 1985 and prior, as of the end of 1985, and, again, as of the end of 1986. In this example, the absolute dollar value of reserves has gone up, but the ratio of actual-to-required reserves for accident year 1985 and prior has gone down. In this example, the IRS (and some financial analysts) would say there has been reserve strengthening, but Irene Bass would not.

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13 See note 9, *supra*.

14 They are illustrated in exhibits 1 and 2 of the Bass report.



The IRS and (most actuaries) would say there has been reserve strengthening in Exhibit 1 because the calendar year incurred losses in 1986 ($860) are greater than the reported accident year incurred losses ($850). Irene Bass claims that these reserves were not strengthened because the actual-to-required ratio (using her terms) went down. This "fact" could not be discovered, however, until the actual was know, i.e., until *all* claims occurring before December 31, 1986 were finally settled. Irene Bass seems to be arguing that reserve strengthening must be measured against reserve adequacy. This argument is also given by James Mac Ginnitie. It does not coincide with the definition which Irene Bass chooses to articulate in her report.

In Exhibit 2, Irene Bass describes another legitimate, but specialized definition of reserve strengthening. Financial analysts are often concerned with the solvency of insurers. Solvency measurement is the measurement of a company's ability to withstand adverse results without becoming insolvent. Solvency is often measured as the ratio of written premiums-to-surplus or earned premiums-to-reserves. In Exhibit 2, the earned premiums-to-surplus ratio increased, leading her to say financial analysts would call it reserve strengthening.

Irene Bass's Exhibit 2 argues against her, not for her. Actuaries (not just analysts) also perform analyses of the financial strength of a p/c insurer. In performing this task, actuaries may call improvements of the premium-to-reserves ratio "reserve strengthening." Irene Bass's use of the term "reserve strengthening," like the financial analyst's use, is legitimate and useful, but not common to most actuaries for the majority of their work.

Irene Bass's Exhibit 3 is an example where reserve strengthening *does* happen in the broad sense. The link ratio in this example is extending, causing a reevaluation of the ultimate incurred losses from older accident years. In this case, the calendar year incurred losses are greater than the accident incurred losses, and the cause if a reevaluation of the cost of older accidents.

Actuaries working in financial analysis, ratemaking, and reserve analysis all have a need to define and measure the impact of reserve changes on calendar year incurred losses. Most would find Irene Bass's definition too restrictive as it stands in relation to the common definition of "reserve strengthening," the same way that other specialized uses stand in relation to it. Hers is not the common actuarial definition of the term.

*REPORT OF W. JAMES MAC GINNITIE, F.C.A.S., F.S.A.*

As I have stated, Irene Bass has given her own definition of reserve strengthening, one that is clear and well-reasoned, but not synonymous with how the term is used by actuaries evaluating the income of a p/c insurer. James Mac Ginnitie implicitly has given a definition that is less clear and, in my opinion, is a mix of the definition with a change in reserve adequacy. James Mac Ginnitie states in the section of his report[15] labeled "Reserve Strengthening" that:

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[15] See page 7 of the "Expert Opinion Report Prepared by W. James Mac Ginnitie," dated December 14, 1994, hereinafter "the Mac Ginnitie report."



> Property-casualty loss reserves are often referred to as strong or weak in a manner that is synonymous with adequate or inadequate. This means that they are adequate or inadequate to discharge the obligations of the insurer for claims arising from incidents that have already taken place as of the date of the financial statement. In one sense this adequacy can only be tested in retrospect, after all the claims have been settled (and the prospect of an old claim reopening is sufficiently remote).

As stated in my prior report, I believe that the terms "reserve strengthening" and "reserve adequacy" are distinguishable, and that, in discussing an insurer's income, reserve strengthening does *not* mean a change in reserve adequacy. By an "adequate" loss reserve, a p/c actuary means that the loss reserve, established on the books of an insurer as of the accounting date, represents the amount of money required to fully settle claims that have already occurred.

As stated in my report, reserve strengthening is not related to the financial position of a p/c insurer at one time, but, rather to its income. Income represents the change in financial position from one accounting date to another. At a given point in time, a p/c insurer establishes the reserves for the most recent claims and reestablishes the reserves for claims that occurred during prior accounting period. Reserve strengthening has a negative impact on income from the subsequent valuation of these older claims.

The impact of reserve strengthening on underwriting income can be determined by looking at the runoff of

reserves from the beginning of an accounting period to the end of the accounting period. At the beginning of the accounting period there are no reserves for the current accident year, only for prior accident years. Thus, reserve strengthening as it impacts underwriting income is only concerned with the change in reserve adequacy for prior accident years.

My example at page 6 shows the difference between reserve strengthening and a change in reserve adequacy. In that example, reserve adequacy decreased from the end of 1992 to the end of 1993, both in absolute dollars (-$700,000) and relatively (-7.8%). However, this change in reserve adequacy could not be discovered until long after the fact. At the end of 1992, the best estimate of the required reserve ($1,750,000) is the carried reserve ($1,250,000), as long as that carried reserve was estimated using sound actuarial methods and considering all available information. So long as the carried reserve is the best estimate, there should be an *equal* likelihood that the loss liabilities of 12/31/92 will settle for less than $1,250,000 as their ultimate settlement for more than $1,250,000. At the end of 1993, by our best estimate of the loss liabilities established on 12/31/93 have deteriorated and adversely impacted income by $300,000. The carried reserves as of 1993 show this fact. At this time the required reserve is best estimated by the carried reserve.

Reserve strengthening is measured by the carried reserve. Reserve adequacy still must wait for the year 2025. Reserve adequacy can only be measured with hindsight. P/C insurers are supposed to establish the full liabilities for losses at year-end. These liabilities are estimates. Even so, they represent best estimates and are not supposed to be



deliberately understated or overstated. With time, however, the reserves established at a point in time for a particular block of accident year claims may prove to have been overstated or understated at prior accounting dates.

As I started at page 8 of this report, although James Mac Ginnitie states that he agrees with Irene Bass's definition of reserve strengthening, his definition is different from her definition, as I can illustrate using my example in this report. In that example, James Mac Ginnitie would not find reserve strengthening, and neither would Irene Bass. If, however, the carried reserve on 12/31/1993 was greater than the required reserve on 12/31/2025, then James Mac Ginnitie *should* find reserve strengthening, but Irene Bass *might not*. Irene Bass *should not*, unless that change was the result of a one-time, non-periodic change in methodology or assumptions. For example, take the case of a large, late-reported claim that significantly changes the case reserve, so that it was greater than the required reserve. In this situation, James Mac Ginnitie should find reserve strengthening, while Irene Bass should not.

*CONCLUSIONS*

Irene Bass and James Mac Ginnitie, in their reports to the Tax Court in the Atlantic case, give definitions of reserve strengthening that I may have used myself when engaged in certain infrequently performed specialized tasks. Irene Bass defines the term in a way that I would find useful when opining on an Annual Statement. Her definition could easily find its way into a disclosure statement of mine describing the impact of a material change in reserve methodology. James Mac Ginnitie's definition stresses changes in the

reserve adequacy. I may very well have used his terms at some point in my career, when commenting on the past reserving practices of an insurer. Even so, their definitions would not apply to those tasks of ratemaking, reserving, or product analysis that form the bulk of my work or other p/c actuarial work.

James Mac Ginnitie states, in the Mac Ginnitie report, that he agrees with what Irene Bass calls reserve strengthening, however, his definition of the term differs from her definition. Both James Mac Ginnitie's definition and Irene Bass's definition are understandable to actuaries and useful in some applications, however, they do not agree with each other and each would be used in separate, limited situations. James Mac Ginnitie's definitions can only be applied after a long passage of time. Irene Bass's definition can only be used in loss reserve certification. Neither applies to the evaluation of an insurers income.

In my opinion, "reserve strengthening" is a positive difference between calendar year incurred losses and accident year incurred losses, as these losses are published on the accounting books of an insurer. The common use of this term in the p/c industry is one where this positive difference affects the income of an insurer.

/s/ Raymond S. Nichols    1/11/95
Raymond S. Nichols
Date



**RESPONDENT'S EXHIBIT AH**
**DOCKET NO. 25767-93**

Rebuttal Reports

of

Ruth E. Salzmann, F.C.A.S., M.A.A.A.

Respondent's Expert

in

*Atlantic Mutual Insurance Co., et. al., Petitioner*

*v.*

*Commissioner of Internal Revenue, Respondent*

Docket No. 25767-93

United States Tax Court

January 12, 1995

IRENE BASS

Rebuttal Report of

Irene Bass's 12/9/94 Report

There are two areas in Ms. Bass's report that need further examination:

1. *Requirements for Materiality and Non-Periodic Changes*

Ms. Bass's definition of reserve strengthening restricts the use of the term to non-periodic and/or material changes in assumptions/methodologies that produce material changes in the margin of adequacy. I agree that these criteria produce reserve strengthening but not with her conclusion that all reserve strengthening must therefore be material. An analogy of this point: All obese persons are overweight, but not all overweight persons are obese.

On pages 15 and 16 of her report, Ms. Bass supports the requirement of "materiality" by citing references to the Annual Statement Schedule F Interrogatories and to the Annual Statement Instructions relating to actuarial opinions. Stipulations of materiality are common in all financial reports or audits. This does not mean that lesser changes had no impact on financial results; it only means that they need not be *disclosed.* Of further significance in these references is the fact that they only apply to material changes in assumptions/methodologies/etc. In the loss reserving area, it is only when such material changes have been



made that one has sufficient confidence that a material change in the margin of adequacy is likely to occur. This is so because the actual change in the margin of adequacy (the reserve strengthening or weakening) will not be known until all accident-year losses through the statement date have been settled. Thus, the purposes of the references cited by Ms. Bass are for reasons other than to restrict the definition of reserve strengthening.

2. *Quantification of Reserve Strengthening*

Ms. Bass's definition of reserve strengthening requires "a material change in the relative level of adequacy of the total reserve inventory" (page 30). There is no exhibit or discussion, except in general terms, of how this material change would be quantified. Therefore let us look at some of her exhibits/examples:

a. In Exhibit 1 and on pages 42, 43, and 44, Ms. Bass implies that a decrease in the ratios of actual to required reserves is reserve weakening; and an increase, reserve strengthening. This is true most of the time, but not all of the time. See the exhibit below:

*Margins of Adequacy*

| *Year-end* | *(1)* *Reserve* | *(2)* *Ultimate Developments* | *(3)* *Ratio (1) - (2)* | *(4)* *Inadequacy (2) - (1)* |
|---|---|---|---|---|
| 12/31/n-1 | $1,500 | $1,700 | .88 | $200 |
| 12/31/n | $1,000 | $1,170 | .855 | $170 |

Though the ratio in column (3) decreased, there was a reserve strengthening of $30. This is so because the inadequacy decreased by that amount. Reserve strengthening is measured in *dollars*. Ratios and percentages, if used, are merely tools to derive the dollars.

b. In Ms. Bass's criticism of the examples of reserve strengthening in the IRS regulation, she rephrases Exhibit 1 on page 36 and seemingly concludes that there is no reserve strengthening because the remaining unpaid 1984 claims "at year end 1986 are identical to what had been held (for them) at year end 1985." It needs to be repeated that reserve strengthening involves the change in the dollar margin of adequacy for *all unpaid claims* as of each inventory date. Because of the one claim that closed in 1986, the 12/31/85 reserves (using her example) were actually $200,000 more inadequate than the 12/31/86 reserves. As a reduction in the margin of inadequacy produces reserve



strengthening, the strengthening in 1986 was $200,000. This measurement would be the result produced by IRS - and, in this case, by myself as well.

c. In Exhibit 1, Ms. Bass states that there has been "no reserve strengthening." True. The IRS, using the data in the exhibit, would produce a reserve strengthening of $10 *as of 12/31/86*. The true result is a reserve weakening of $140,[1] which does not become known *until many years later* after all of the respective losses are settled. (Such ultimate values are set forth in cols. 6 and 14.) All actual calculations of reserve strengthening require fully developed data as illustrated in Exhibit 1, but the time-delay involved is not quite so evident. The question remains: If a timely *measurement* is needed - and a true measurement will not be available for many years - is it acceptable to use an imperfect *measurement* that is consistent with "lay" usage of the term?

/s/ Ruth E. Salzmann
Ruth E. Salzmann

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[1] The inadequacy of 12/31/85 reserves is $60 ($860 - $800), and the inadequacy of 12/31/86 reserves is $200 ($1,210 - $1,010). The change is an increase in the inadequacy, or a reserve weakening, of $140.

RESPONDENT'S EXHIBIT AI
DOCKET NO. 25767-93

Rebuttal Reports

of

Ruth E. Salzmann, F.C.A.S., M.A.A.A.

Respondent's Expert

in

*Atlantic Mutual Insurance Co., et. al., Petitioner*

*v.*

*Commissioner of Internal Revenue, Respondent*

Docket No. 25767-93

United States Tax Court

January 12, 1995

W. JAMES MacGINNITIE



**Rebuttal Report of**

**W. James MacGinnitie's 12/14/94 Report**

**I do not disagree with Mr. MacGinnitie's general definition and measurement of reserve strengthening (weakening), but I do take exception to some of the specifics in his report.**

***Regarding Conclusion 1***

**This conclusion is divided into three parts, the last two pertaining to the "arbitrary limits" imposed by the IRS regulation. My comments on material supporting these conclusions are as follows:**

1. **In reviewing the criticisms of the "arbitrary limits," one must not overlook the fact that these limits serve as caps on the amount of reserve strengthening. A cap (if applicable) therefore reduces the amount of reserve strengthening, which in turn *increases* the amount of unpaid losses eligible for "fresh start" discounting.**

2. **The data arrangements used by the IRS to calculate reserve strengthening may be arbitrary to some, but they are the "data arrangements" set forth in the statutory annual statement, which is a common format applicable to all P/C insurers. Therefore, it is reasonable, in my opinion, to use annual statement detail even though some insurers may have a more refined data arrangement available. What a Pandora's box would be opened if a common published format were not prescribed!**

3. Another of Mr. MacGinnitie's criticisms states that strengthening, as measured by the IRS, is arbitrary because it depends upon when the claim is settled, or when payments are made. This criticism is illustrated in Exhibit 2.[1] This criticism can be answered by noted that when the IRS calculates its "fresh start," the discount is allowed on 12/31/86 reserves, reduced by the adverse developments of the 12/31/85 reserves, reported through 12/31/86. These adverse developments are the "reserve strengthening" as defined by the IRS. If, as the criticism implies, these unfavorable developments were not limited to the amount of the respective 12/31/86 reserve, the subtraction thereof would produce a *negative* reserve for that category. Would it make sense to calculate a discounted value for a negative reserve?

4. Example 4 is presented in Mr. MacGinnitie's report to show the "anomaly in the IRS test, that consistently under-reserved insurers will always manifest 'strengthening' . . ." This statement is generally true, but not "always." A company can be under-reserved and still report favorable developments (an adequacy) in the first twelve months, but not when fully developed.[2] In this case,

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[1] Example 2 has an arithmetic error. The reserve strengthening, calculated in the last column for Case 2, should be $1,000,000 instead of the $1,500,000 shown. This correction, however, does not change the thrust of the criticism.

[2] A study of Schedule P results for individual companies will quite often show favorable developments after twelve months that subsequently revert to an unfavorable status as the larger and more complicated claims are



there would be no reserve strengthening as defined by the IRS.

5. In Example 3, Mr. MacGinnitie illustrates how external developments, beyond the insurer's control (in this case the insolvency of the company's reinsurer), can produce "strengthening" under the IRS test. I would argue that loss reserves are subject to *all future contingent* developments; and for this reason, all developments should be included in retrospective tests as well as in the measurements of strengthening. It is to be remembered that such adverse developments are limited in the IRS test to those that develop in the subsequent twelve months.

*Regarding Conclusion 2*

Mr. MacGinnitie concludes that rather than a reserve strengthening of $6.5 million in 1986 as calculated by the IRS for Atlantic Mutual, the "actual" result was a reserve weakening of $4.2 million. The $4.2 million was derived from retrospective tests of the 12/31/85 and 86 reserves with developments through 12/31/93. In this calculation, the indicated inadequacy of the 12/31/86 reserve exceeded the indicated inadequacy of the 12/31/85 reserve by $4.2 million. When there is an increase in the inadequacy dollars, there is reserve weakening in that accounting period, as Mr. MacGinnitie noted in his conclusion.

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settled.

Note that I used the adjective, indicated, to describe the calculated inadequacies. This modifier is necessary because the data involved still include estimates for the unpaid amounts on claims not yet settled. These estimates accounted for 12.7% of the 12/31/86 developed dollars and 11.2% of the 12/31/85 developed dollars. Mr. MacGinnitie assumes that these estimates are "accurate and that future developments will be small." This may be a doubtful assumption for two reasons:

1. the company's history of inadequate reserve levels, and

2. the higher unpaid loss percentages existing in the P/C industry at approximately similar stages of development.[3] (see Appendix I)

To the extent that Mr. MacGinnitie's assumption is not correct, a "fairer" comparison of the respective reserve inadequacies would have resulted if the calculation had included the same period of development (in years) for both reserve dates.

Perhaps the more important issue that can be derived from Mr. MacGinnitie's analysis is this: If it takes seven years to produce a reasonable approximation of the reserve

[3] The exhibit in this Appendix shows the magnitude of unpaid loss levels after six years of development. Although six years is one and two years shorter than the development periods used in Mr. MacGinnitie's calculation, the reserve date of 12/31/76 is also earlier (when tails were shorter). It is the general magnitude of unpaid levels in developed data that is of concern here, not the precise comparability of the data.



strengthening (weakening) that occurred in a specific calendar year, what does one do when a timely quantification is needed? And if this need exists, is it justifiable to use an imperfect measurement that is consistent with a common usage of the term?

/s/ Ruth E. Salzmann

Ruth E. Salzmann

Appendix 1

96 Estimated Liabilities for Losses
* 1988 Revision

Prospective Evaluations

As mentioned earlier in "Retrospective Tests," a complete review of prior liability levels requires a prospective evaluation of the remaining unpaid amounts in the developed-to-date liabilities. Such remaining amounts are likely to be substantial. The following exhibit illustrates
* the level of unpaid remainders after six years for eight insurers.

Unpaid Status of Developed Liabilities
After Six Years

| Group | % Unpaid | Group | % Unpaid |
|---|---|---|---|
| AEtna Life | 31.8 | Pru-Pac (Co.) | 27.8 |
| CNA | 30.0 | St. Paul | 27.5 |
| Liberty | 26.4 | State Farm (2 Cos.) | 5.1 |
| Nationwide (2 Cos.) | 7.5 | Travelers | 29.3 |

Although percentages can vary from insurer to insurer because of different levels of adequacy in the remaining unpaid portions, this effect has been neutralized to a great extent by using liabilities



* developed through ten years.* Different claim-settlement practices may also contribute to the variations, but the primary cause of variation is the differences in mix of business underwritten by insurers. The exhibit points out the continuing significance of unpaid dollars in developed liabilities.

* [39] These percentages are complements of the quotients of paid developments through
* six years divided by 12/31/76 liabilities developed through ten years, or 12/31/86.

Source: "Property-Liability Insurance Accounting", IASA, 1988

Revision; Chapter 4, "Estimated Liabilities for Losses and Loss

Adjustment Expenses" authored by Ruth E. Salzmann, p. 96.